E-MANUAL

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Model_____ Serial No._____

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Glossary

Using Smart Hub

Connecting to the Internet

Network > Network Settings

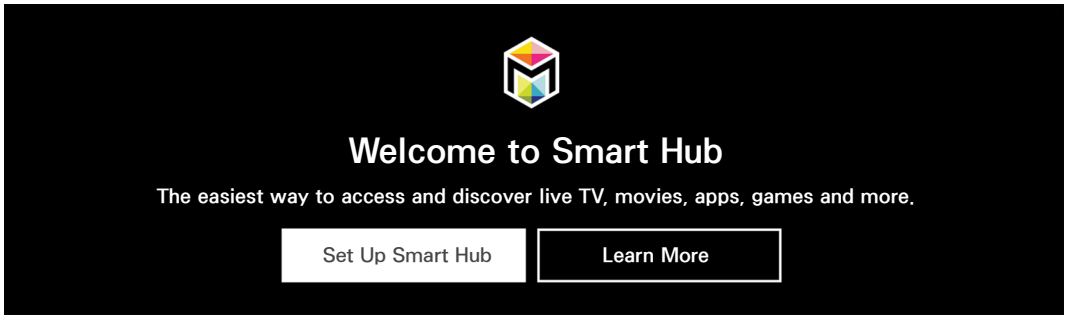
Connect the TV to the Internet wired or wirelessly.

Actual menu screen may differ depending on the TV model.

Setting up Smart Hub

Smart Hub > Open Smart Hub

If **Smart Hub** is activated for the first time, follow the instructions on the screen to finish the required settings.



Actual menu screen may differ depending on the TV model.

Using Smart Hub

Press the button to open the Smart Hub and use the functions provided by Smart Hub.

Actual menu screen may differ depending on the TV model.

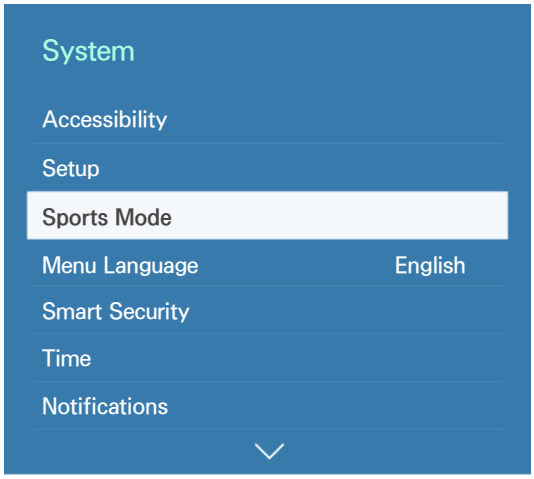
For more information, refer to "Smart Hub".

Improving the Viewing Experience of Sports Events

Activating Sports Mode

System > Sports Mode

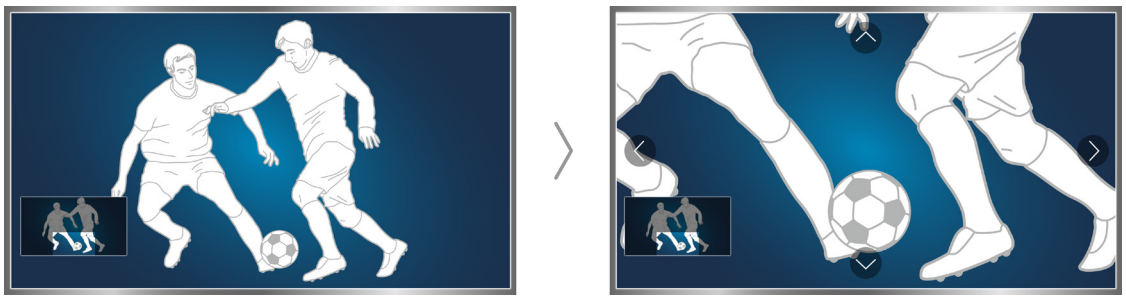
Set Sports Mode to On.



Your TV's menu may differ from the image above, depending on the model.

Using the functions available in sports mode

Set Sports Mode to On, and then press the Enter button on the Samsung remote Control. Select a function to run.



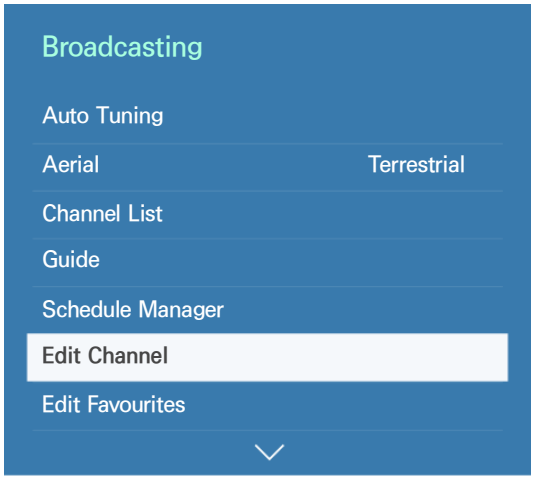
For more information, refer to "Adding Realism to Sports".

Actual menu screen may differ depends on the specific model and area.

Editing channels

Running the Edit Channel function

Broadcasting > **Edit Channel**



Your TV's menu may differ from the image above, depending on the model.

Rearranging or deleting channels

Broadcasting > **Edit Channel** > **Change Number** or **Delete**

You can rearrange the order of channels or delete channels. To change the order of a channel, select it and then select **Change Number**. To delete a channel, select it and then select **Delete**.

Certain channels are not available depending on the channel type.

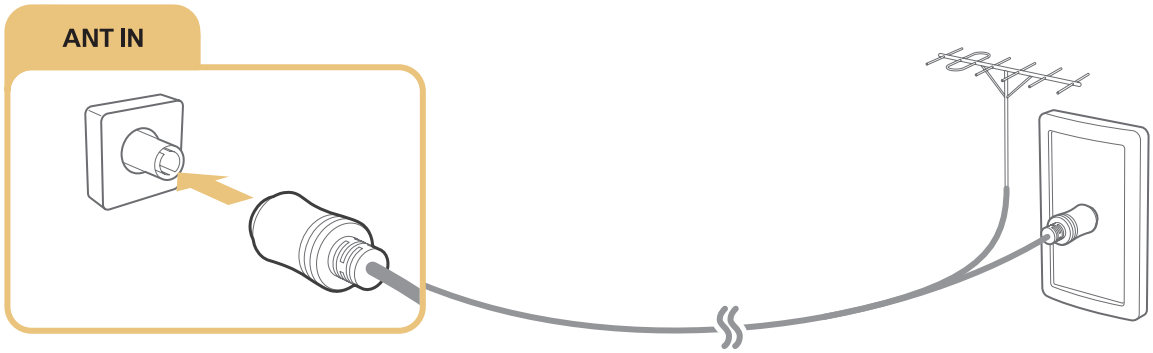
Aerial Connection

Before connecting any external devices and cables to the TV, first verify the model number. A sticker containing the model number is attached to the back of the TV. The connection method varies depending on the model.

An aerial must be connected to the TV in order to receive broadcast signals.

- An aerial connection is not necessary when a cable box is used.
- Actual pictures may differ depends on the specific model and area.

Connect the correct aerial cable according to your viewing environment to the TV's aerial connector, as shown in the diagram.



Connecting to the Internet

Establishing a Wired Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.

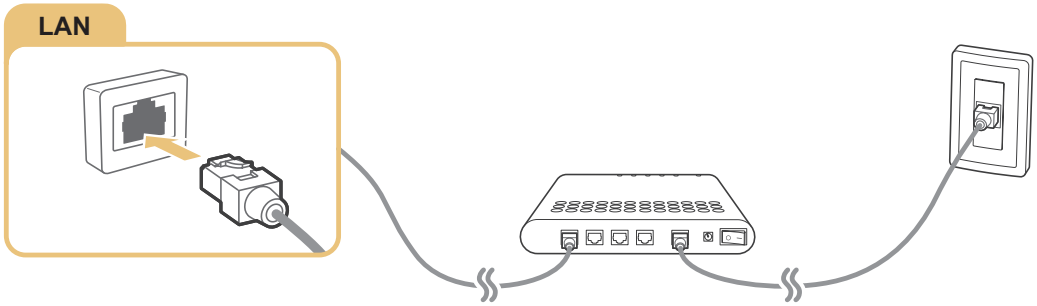
Connecting a LAN Cable

Use a LAN cable.

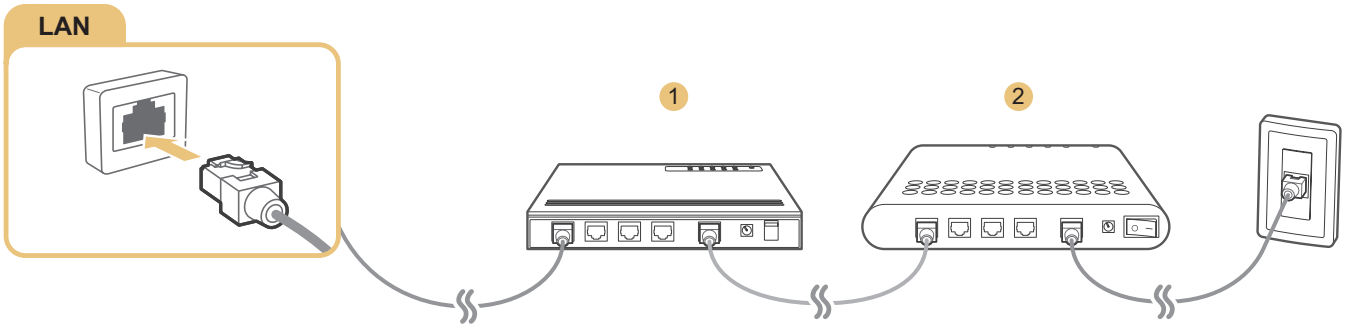
- The TV will not be able to connect to the Internet if the network speed is below 10Mbps.
- Use Cat 7 LAN cables to link your TV to the Internet Access Points.

There are three ways to connect the TV to the Internet. Refer to the diagrams and connect the LAN cable to the LAN connector on the back of the TV.

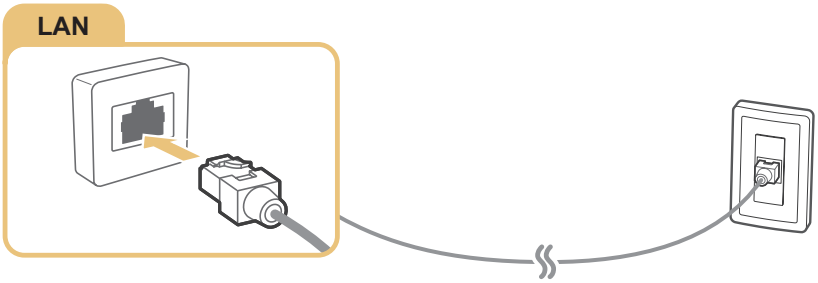
- External Modem



- ① IP Router + ② External Modem



- Wall-mounted LAN Outlet



Connecting to a Wired Internet Network Automatically

Network > **Network Settings** Try Now

Automatically connect to an available network.

1. Set the network type to **Wired**, and then press ↵.
2. The TV attempts to connect to an available network. Once successful, you will see a confirmation message. Select **OK**. If the attempt fails, try again, or connect manually.

Connecting to a Wired Internet Network Manually

Network > **Network Settings**

With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway, and DNS values manually to connect to the network. To get these values, contact your Internet Service Provider (ISP).

Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. Set the network type to **Wired**, and then press ↵.
2. Select **Stop** when the TV attempts to connect to the network. Once the network connection has been interrupted, select **IP Settings**.
3. In the **IP Settings** screen, set the **IP setting** to **Enter manually**, enter the **IP Address**, **Subnet Mask**, **Gateway**, and **DNS Server** values, and then select **OK**.
   - Use one of the following methods to enter the numerical values.

     Set the numbers using the ▲ and ▼ buttons on screen.

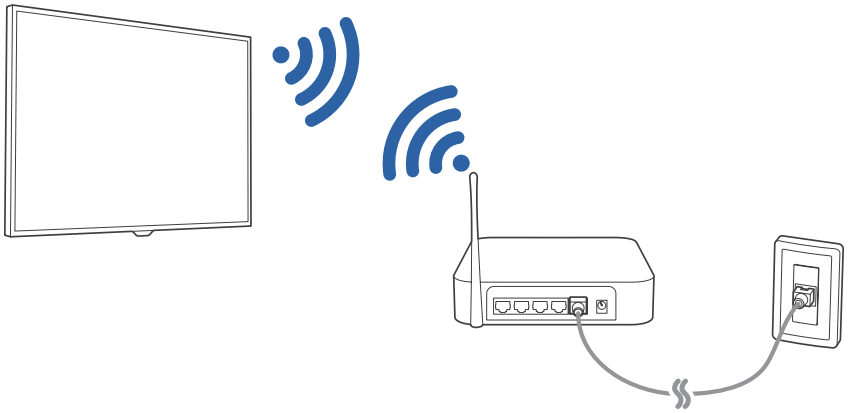
     For general remote control, enter the numbers directly. (Availability depends on the specific model and area.)
4. The TV attempts to connect to the network again using the specified settings. A confirmation message appears once a connection is established. Select **OK**.

   The network connection speed may differ depending on the DNS server settings.

   For details on the DNS server settings, contact your Internet service provider (ISP).

Establishing a Wireless Internet Connection

Connecting the TV to the Internet gives you access to online services and SMART features, and lets you update the TV's software quickly and easily through the Internet.



Connecting to a Wireless Internet Network Automatically

Network > Network Settings

Connect the TV to the Internet via a wireless router. Make sure you have the wireless router's SSID (name) and security key settings before attempting to connect. The security key can be found on the wireless router's configuration screen.

1. Select **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select a network (SSID). If the network you want doesn't appear in the list, select **Add Network**, and enter the network's SSID manually.
3. Enter the security key and select **Done**. If the selected network is not security-enabled, the TV attempts to connect right away.
4. A network connection will be attempted. Once a connection is established, the TV displays a confirmation message. Select **OK**. If the attempt fails, try again, or connect manually.

Connecting to a Wireless Internet Network Manually

Network > Network Settings

With networks that require a static IP address, you will need to enter the IP address, subnet mask, gateway and DNS values manually to connect to the network. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

Refer to the "Dynamic versus Static IP Addresses" section for more information on dynamic IP and static IP addresses.

1. Select **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select the network (SSID) you want to connect to. If the wireless router doesn't appear in the list, select **Add Network**, and enter the network's SSID manually.
3. Enter the security key and select **OK**. If the selected network is not security-enabled, the TV attempts to connect right away.
4. Select **Stop** when the TV attempts to connect to the network. Once the network connection has been interrupted, select **IP Settings**.
5. In the **IP Settings** screen, set the **IP setting** to **Enter manually**, enter the **IP Address**, **Subnet Mask**, **Gateway**, and **DNS Server** values, and then select **OK**.
   - Use one of the following methods to enter the numerical values.

     Set the numbers using the ▲ and ▼ buttons on screen.

     For general remote control, enter the numbers directly. (Availability depends on the specific model and area.)
6. The TV attempts to connect to the network again using the specified settings. A confirmation message appears once a connection is established. Select **OK**.

   The network connection speed may differ depending on the DNS server settings.

   For details on the DNS server settings, contact the Internet service provider (ISP).

Connecting to a Wireless Internet Network with WPS

Network > Network Settings

With wireless routers that support WPS (Wi-Fi Protected Setup) or PBC (Push Button Configuration), it's possible to press a button on the router to connect the TV to the Internet.

This functionality is not available with wireless routers that do not support WPS. Check to see if your wireless router supports WPS.

1. Select **Wireless**. The TV automatically displays a list of available wireless networks.
2. Select **WPS(PBC)** and then press the WPS or PBC button located on the wireless router within two minutes.
3. The TV exchanges the network name (SSID) and security key automatically and then attempts to connect to the Internet. A confirmation message appears once a connection is established. Select **OK**.

Troubleshooting Internet Connectivity Issues

Troubleshooting Wired Internet Connectivity Issues Try Now

No network cable found

Make sure the network cable is plugged in. If it is connected, make sure the router is turned on. If it is on, try turning it off and on again.

IP auto setting failed

Do the following or configure the **IP Settings** manually.

1. Ensure that the DHCP server is enabled on the router and reset the router.
2. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network

Do the following:

1. Check all **IP Settings**.
2. Ensure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet

1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet

If the problem persists, contact your Internet Service Provider.

Troubleshooting Wireless Internet Connectivity Issues

Wireless network connection failed

Selected wireless router not found. Go to **Network Settings** and select the correct router.

Unable to connect to a wireless router

Check the following:

1. Check if the router is turned on. If it is, turn it off and on again.
2. Enter the correct security key if required.

IP auto setting failed

Do the following or configure the **IP Settings** manually.

1. Make sure that the DHCP server is enabled on the router. Then, unplug the router and plug it back in.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Unable to connect to the network

Do the following:

1. Check all **IP Settings**.
2. Enter the correct security key if required.
3. If this does not work, contact your Internet Service Provider for more information.

Connected to a local network, but not to the Internet

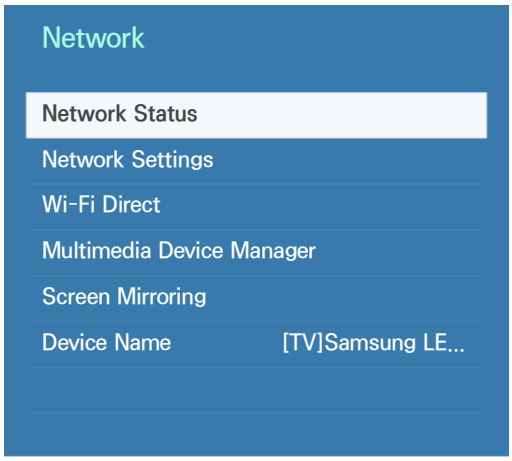
1. Make sure that the Internet LAN cable is connected to the router's external LAN port.
2. Check the DNS values in the **IP Settings**.
3. If the problem persists, contact your Internet Service Provider.

Network setup is complete, but unable to connect to the Internet

If the problem persists, contact your Internet Service Provider.

Checking the Internet Connection Status

Network > Network Status Try Now



Actual menu screen may differ depending on the TV model.

View the current network and Internet status.

Video Device Connection

Your TV has a variety of connectors for video input from external devices such as cable boxes, Blu-ray players, DVD players, camcorders, and gaming consoles. Below is a list of featured connectors shown in descending order of picture quality.

- HDMI
- Component
- External Input

Connect a video device to the TV via an HDMI connector for the best picture quality. If the device does not have an HDMI connector, try a component connector to get the next best picture quality.

The number of connectors and their names and locations may vary depending on the model.

Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors and their names and locations may vary depending on the manufacturer.

HDMI Connection

The following types of HDMI cables are recommended:

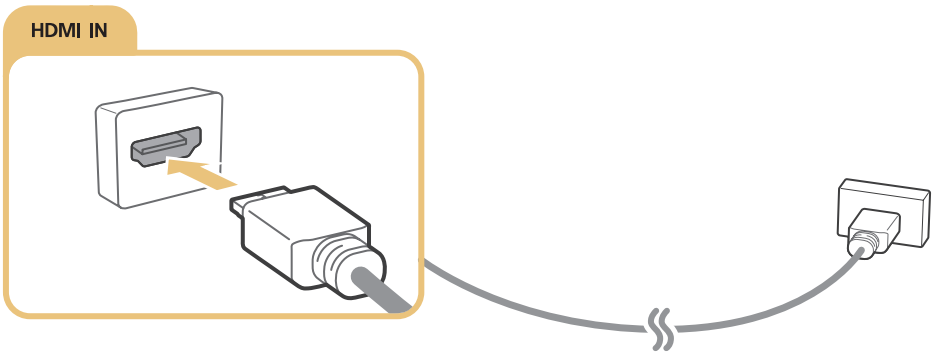
- High-Speed HDMI Cable
- High-Speed HDMI Cable with Ethernet

HDMI cables have certain requirements:

- Use an HDMI cable with a thickness of 14 mm or less.
- Using a non-certified HDMI cable may result in a blank screen or a connection error.
- Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.
- This TV does not support HDMI Ethernet Channel. Ethernet is a LAN (Local Area Network) built with coaxial cables standardised by the IEEE.
- HDCP 2.2 can only use the HDMI(MHL) port. HDCP is short for 'High-bandwidth Digital Content Protection' and is for video copyright protection.
- Many computer graphics adaptors do not have HDMI ports, but have DVI ports instead. If your computer graphics adaptor has a DVI port, use an HDMI-to-DVI cable to connect the computer to the TV. For more information, refer to "Connecting with the HDMI-to-DVI Port".
- If you are using an HDMI adapter, the TV recognises the signal as an HDMI signal and may respond differently than it would to an MHL-to-HDMI cable connection.

Refer to the diagram and connect the HDMI cable to the video device's HDMI OUT connector and the TV's HDMI IN connector.

- The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

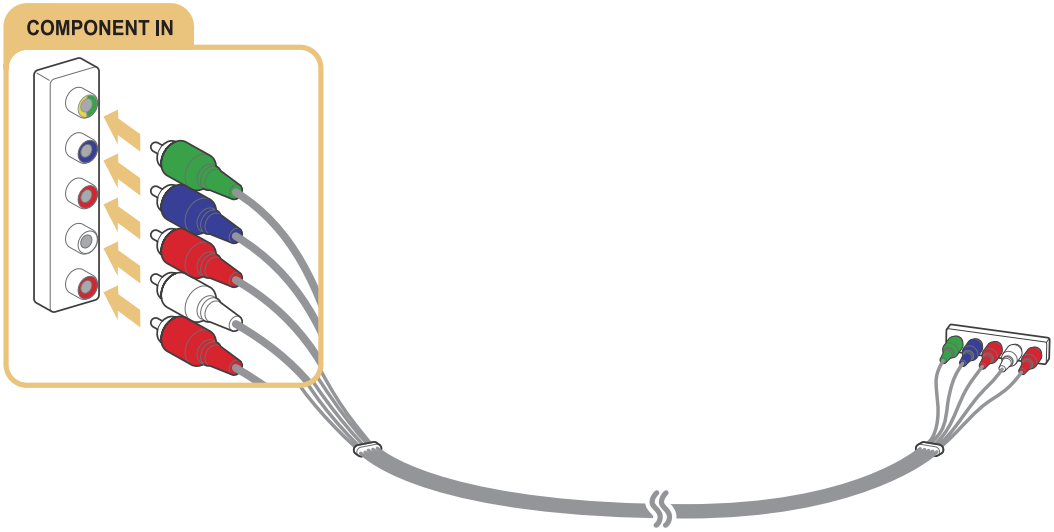
Component Connection

Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker containing the model number is attached to the back of the TV. The connection method varies depending on the model.

Refer to the diagram and connect the Component cable to the TV's component input connectors and the device's component output connectors.

Make sure the cable colours match the connector colours.

The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

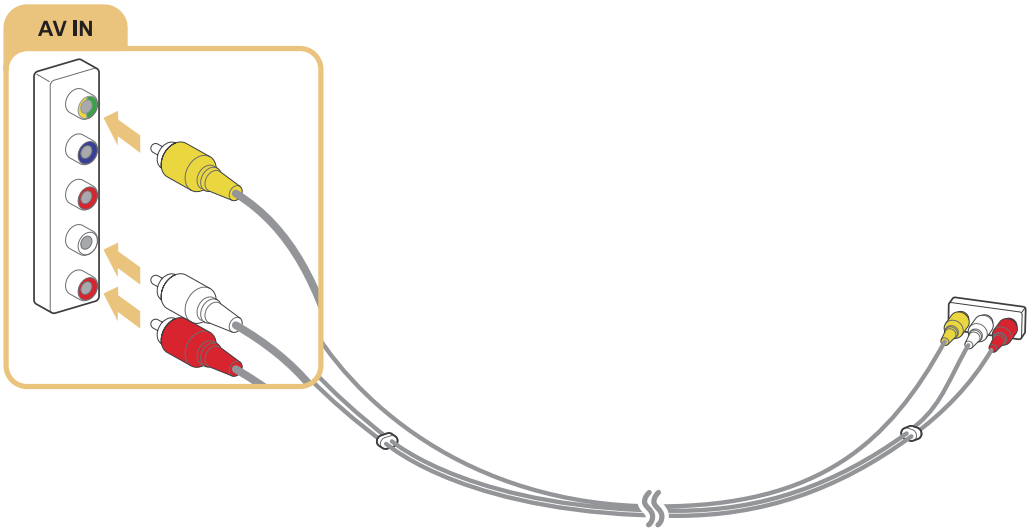
External Input Connection

Before connecting any external device or cable to the TV, first verify the TV's model number. A sticker containing the model number is attached to the back of the TV. The connection method varies depending on the model.

Refer to the diagram and connect the AV cable to the TV's AV input connectors and the device's AV output connectors.

If you are using the TV's AV input connectors, connect the video cable to the Y connector. Some models feature a video connector as well. In this case, connect the cable to the video connector.

The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, press the SOURCE button to select the connected external device.

TV Audio through the External Speakers

Your TV has a variety of connectors for audio input from devices such as Blu-ray players and DVD players and for audio output to such devices as amplifiers. The connectors are listed below.

- ARC (Audio Return Channel)
- Digital Audio (Optical)
- Audio (Analogue)

There are several issues to bear in mind when using audio input:

- For better audio quality, it is a good idea to use an AV receiver.
- The number of connectors and their names and locations may vary depending on the model.
- Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors and their names and locations may vary depending on the manufacturer.

HDMI (ARC) Connection

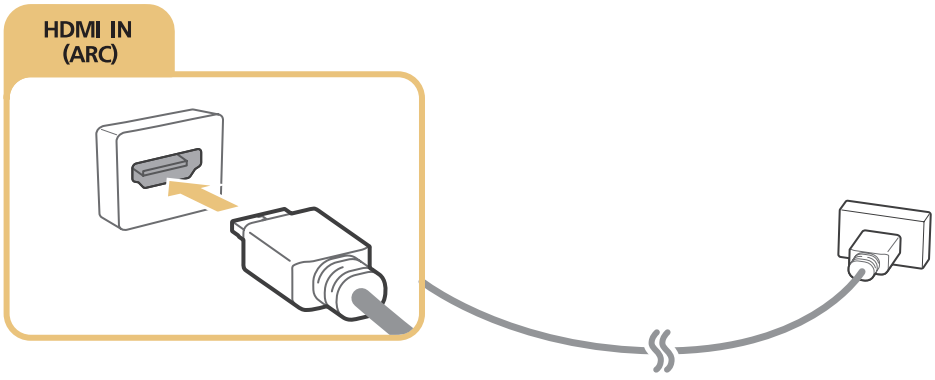
Before connecting any external devices and cables to the TV, first verify the model number of the TV you purchased. A sticker showing the model number is attached to the back of the TV. The connection method varies depending on the model.

ARC (Audio Return Channel) enables digital sound output using just an HDMI cable. However, ARC is only available through the HDMI IN (ARC) port and only when the TV is connected to an ARC-enabled AV receiver.

Some models may not support ARC.

The number of connectors and their names and locations may vary depending on the model.

Connect an HDMI cable to the TV's HDMI IN (ARC) connector and the device's HDMI OUT connector.



Digital Audio (Optical) Connection

Before connecting any external device or cable to the TV, first verify the TV's model number. A sticker showing the model number is attached to the back of the TV. The connection method varies depending on the model.

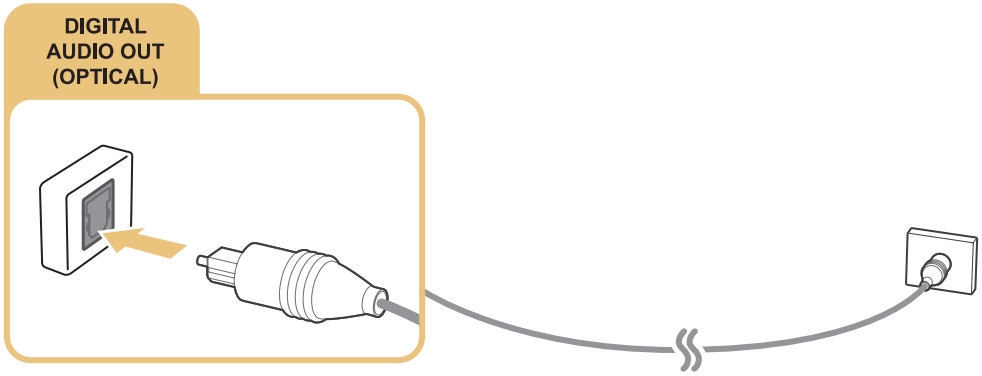
Connecting an AV receiver to the TV via a digital audio (optical) connector lets you listen to digital audio.

Connecting a device using an optical cable does not automatically turn off the TV speakers. To turn off the TV's speakers, set **Speaker Select** (**Sound** > **Speaker Settings** > **Speaker Select**) to something other than TV Speaker.

Adjust the audio device's volume using its remote control.

- An unusual noise coming from the audio device while you are using it may indicate a problem with the audio device itself. If this occurs, ask for assistance from the audio device manufacturer.
- Digital audio is only available with 5.1-channel broadcasts.
- Only use headphones with a 3-conductor TRS type jack.
- The headphone volume and the TV volume are adjusted independently of each other.
- While the headphone is connected, the TV speakers are muted and certain **Sound** options are deactivated.

Refer to the diagram and connect the optical cable to the TV's DIGITAL AUDIO OUT(OPTICAL) connector and the device's DIGITAL AUDIO IN(OPTICAL) connector.



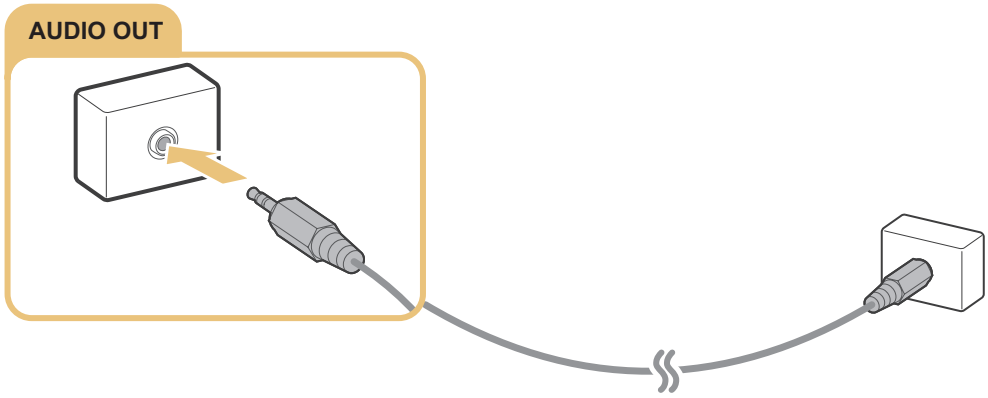
Audio Output Connection

Availability depends on the specific model and area.

Before connecting any external device or cable to the TV, first verify the TV's model number. A sticker containing the model number is attached to the back of the TV. The connection method varies depending on the model.

The connectors names and locations may vary depending on the model.

Refer to the diagram and connect the audio cable to TV's AUDIO OUT connector and the device's AUDIO IN connector.



Connecting to a Computer

You can directly connect a computer to the TV or to the network to view the computer screen or content on the TV. Connect the computer to the TV as follows.

- **Connecting via HDMI Port**

  You can connect the computer to the TV using the HDMI cable to display the computer screen on the TV.

- **Connecting with the HDMI (DVI) Port**

  You can connect a computer to the TV by connecting the computer's DVI port to the TV's HDMI port with the DVI to HDMI cable to display the computer screen on the TV.

- **Connecting via Samsung Link**

  Quickly access the photo, video and music files saved on a computer on which Samsung Link software is installed, even if you do not connect the TV directly to the computer.

- **Connecting via Home Network (DLNA)**

  Quickly access the photo, video and music files saved on a computer by connecting the TV and the computer to the same router or AP.

Connection notes for computers

- For the resolutions supported by the TV, refer to "Read Before Connecting a Computer (Supported Resolutions)".
- As long as file sharing is activated, unauthorised access may occur. When you do not need to access data, disable file sharing.
- Your PC and Smart TV must be connected on the same network.

Connecting via HDMI Port

For HDMI connection, one of the following HDMI cable types is recommended:

- High-Speed HDMI Cable
- High-Speed HDMI Cable with Ethernet

Use an HDMI cable with a thickness of 14 mm or less. Using a non-certified HDMI cable may result in a blank screen or a connection error.

Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.

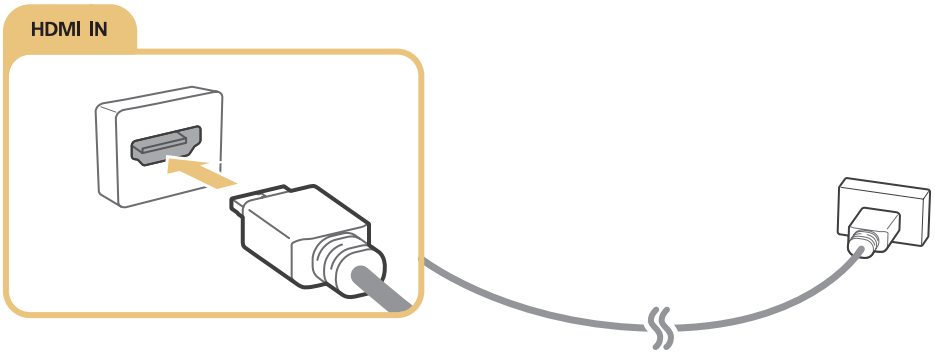
This TV does not support HDMI Ethernet Channel. Ethernet is a LAN (Local Area Network) built on coaxial cables standardised by the IEEE.

HDCP 2.2 can only use the HDMI(MHL) port. HDCP is short for 'High-bandwidth Digital Content Protection' and is for video copyright protection.

Some computers do not support HDMI interface, depending on its graphics adapter specifications. In this case, use a DVI-to-HDMI cable to connect the computer to the TV.

Refer to the diagram and connect the HDMI cable to the external video device's HDMI OUT connector and the TV's HDMI IN (STB) connector.

The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

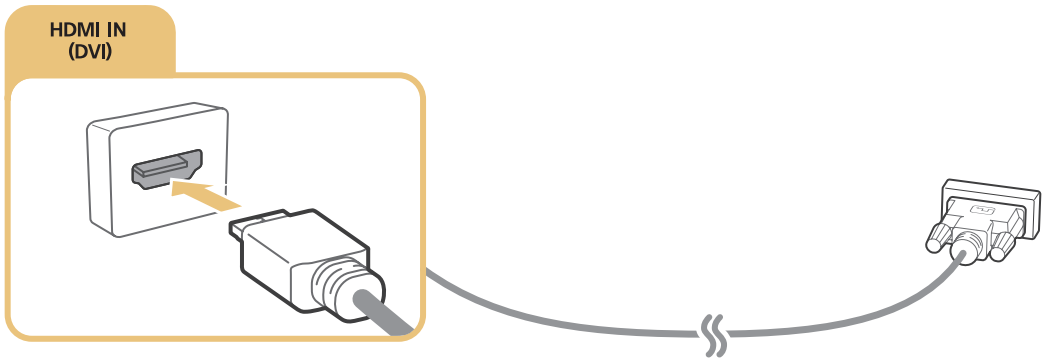
Connecting with the HDMI-to-DVI Port

If the graphics adapter of your computer does not support HDMI interface, connect the computer to the TV with the DVI (Digital Visual Interactive) to HDMI cable. However, DVI-to-HDMI connection is supported by the HDMI port for DVI only and does not support audio signal transmission. To listen to the computer sound, connect the external speaker to the computer's audio output connector.

For information on resolutions supported by the TV, refer to "Read Before Connecting a Computer (Supported Resolutions)".

Refer to the diagram and connect the DVI to HDMI cable to the TV's HDMI IN (DVI) port and the computer's DVI OUT port.

The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, press the SOURCE button to select the connected external device.

Connecting via Samsung Link

Quickly access photo, video and music files saved on a computer with Samsung Link software installed. Also, use Samsung Link to play and view the content of a computer that has been registered to Samsung Link under your Samsung account, even if the computer and the TV are not connected to the same router or AP.

1. Visit the Samsung content and service portal (http://link.samsung.com) on a computer and sign into your Samsung account.

   To install Samsung Link desktop software, you will need to first sign into your Samsung account. If you don't have a Samsung account, create one first.

2. Install Samsung Link desktop software. When the installation is complete, the computer will be registered to Samsung Link.
3. Specify the folder you wish to link to the TV. You can view and play photo, video and music files contained in the specified folder on the TV screen.

   For more information on using Samsung Link desktop software, refer to the software's Help section.

Connecting via Home Network (DLNA)

Quickly access and view/play photo, video and music files from a computer on the TV screen.

1. Connect the TV and the computer to the same router or AP. A home network will be configured once the two connections are established.

   Home Network (DLNA) enables content-sharing between the TV, computers and mobile devices connected to the same wired or wireless router.

2. From the computer, select [Control Panel] > [Network and Internet] > [Network and Sharing Centre] > [Change advanced sharing settings] and select [Choose media streaming options...] to activate media streaming.
3. From the list, set TV to [Allowed].
4. Launch Windows Media Player from the computer, select [Settings] > [Library Management] and then add the location where the photo, video and music files are saved to view/play the files on the TV screen.

   It will be possible to view/play on the screen files moved to Windows Media Player's default folder.

   As long as File Sharing is activated, unauthorised access may be allowed. Disable File Sharing if data access is not required.

Connecting with a Mobile Device

Connect mobile device such as a smartphone or tablet to the TV directly or indirectly over a shared network and display the mobile device screen or content on the TV screen. Connect the mobile device to the TV as follows.

- **Connecting with MHL-to-HDMI Cable**

  Connect the mobile device's USB port to the TV's HDMI port with the MHL-to-HDMI cable to view the mobile device screen on the TV.

- **Mobile Device Screen on TV (Screen Mirroring)**

  Wirelessly connect the TV to the mobile device with the mirroring function to view the mobile device's screen on the TV.

  This option is available only with mobile devices that support mirroring.

- **Connecting Mobile Devices without a Wireless Router (Wi-Fi Direct)**

  Wi-Fi Direct enables you to connect the TV to a mobile device without a router or AP. Quickly access and play photo, video and music files from a connected mobile device on the TV screen.

  This option is available only with mobile devices that support Wi-Fi Direct.

- **Connecting via Samsung Link**

  Samsung Link enables you to play photo, video and music files from a Samsung Link-enabled mobile device without having to manually connect the device to the TV.

- **Connecting via Home Network (DLNA)**

  View/play on the TV photo, video and music files from a mobile device connected to the same router or AP as the TV.

- **Connecting via Smart View**

  Install and run the Smart View app on your mobile device, and connect it to the TV in the same network.

Connection notes for mobile devices

- To use the Screen Mirroring function, the mobile device must support a mirroring function such as AllShare Cast or Screen Mirroring. To check whether your mobile device supports the mirroring function, please visit the mobile device manufacturer's website.
- To use Wi-Fi Direct, the mobile device must support the Wi-Fi Direct function. Please check if your mobile device supports Wi-Fi Direct.
- The video or audio may intermittently stop depending on network conditions.

Connecting with MHL-to-HDMI Cable

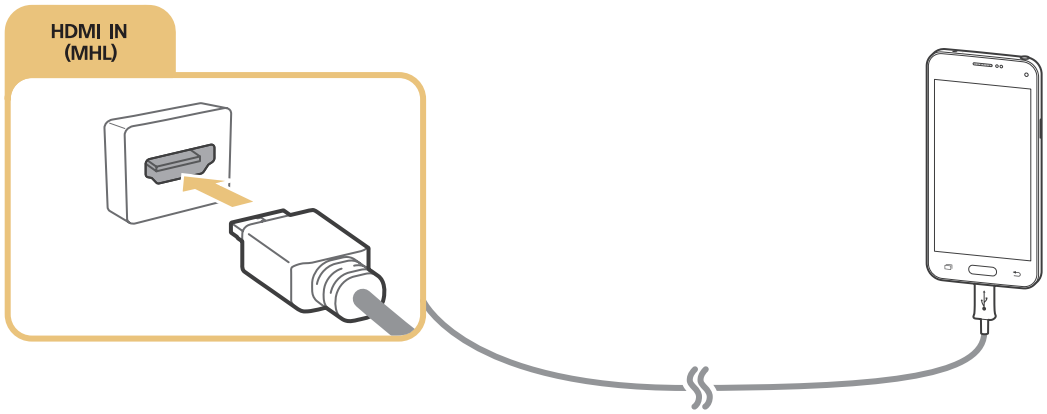
Your TV supports MHL (Mobile High-definition Link) via an MHL cable. MHL enables viewing and playing video, image, and audio files from mobile devices on the TV. However, MHL is only available through the TV's HDMI IN (MHL) port and only when used in conjunction with an MHL-enabled mobile device.

For information on configuring MHL on your mobile device, refer to the device's User Manual.

- Connecting an MHL-to-HDMI cable automatically switches **Picture Size** to **Fit to screen**. This setting will not change automatically if you are using an HDMI adapter. In this case, change the setting manually in the menu.
- If you are using an HDMI cable, the TV recognises the signal as an HDMI signal and may respond differently than it would to an MHL-to-HDMI cable connection.
- HDCP 2.2 can only use the HDMI(MHL) port. HDCP is short for 'High-bandwidth Digital Content Protection' and is for video copyright protection.

Refer to the diagram and connect the MHL-to-HDMI cable to the TV's HDMI IN (MHL) port and the mobile device's USB port.

- The number of connectors and their names and locations may vary depending on the model.



Once the connection has been made, you will be able to select the connected external device using the SOURCE button.

Using Screen Mirroring

Network > **Screen Mirroring** Try Now

You can wirelessly connect a mirroring-enabled mobile device to the TV and play the video and audio files stored on the device on the TV. Mirroring refers to the function that plays the video and audio files located on a mobile device on a TV and on the mobile device simultaneously.

Connecting via a mobile device

1. Launch **Screen Mirroring** function on your mobile device. The mobile device searches for available devices to connect to.
2. Select the TV from the list. The TV automatically allows the connection and the device connects.
3. Select **Allow** to connect the mobile device.

   All previously allowed mobile devices will automatically connect without needing approval.

   If you select **Deny**, the device cannot connect. To change the connection status of a denied device, select **Network** > **Multimedia Device Manager**, select the device, and select **Allow**.

Connecting by automatically allowing the connection

1. Select **Network** > **Screen Mirroring**, You can also start screen mirroring by pressing the **SOURCE** button on your remote and selecting **Screen Mirroring** from the list at the top of the screen.
2. Launch Screen Mirroring function on your mobile device. The mobile device searches for available devices to connect to.
3. Select the TV from the list. The TV automatically allows the connection and the device connects.

   If the mobile device cannot connect, turn off and on the TV and mobile device.

Managing the connection status of previously connected mobile devices

1. Select **Network** > **Multimedia Device Manager**. The TV displays a list of devices that have previously connected to the TV or have tried to connect to the TV and been denied. The status of the connection (Allow/Deny) is also displayed.
2. Select a device.
3. Select connection type or delete the device from the list.

This function is only available if the devices have previously connected to the TV or have previously attempted to connect and been denied.

Connecting Mobile Devices without a Wireless Router (Wi-Fi Direct)

Network > **Wi-Fi Direct**

Wi-Fi Direct lets you connect mobile devices directly to your TV using wireless technology. After connecting a device to the TV using Wi-Fi Direct, it will be possible to view/play video, photo, and music files from the device on the TV.

The mobile device must support Wi-Fi Direct. Make sure the mobile device you intend to use supports Wi-Fi Direct.

1. Enable Wi-Fi Direct on the mobile device and then launch **Wi-Fi Direct**. The TV automatically scans for and displays a list of available devices. The TV's name also appears on the mobile device.
2. Select the device from the list to initiate a connection. If a connection request is made by the TV, a permission message appears on the mobile device and vice versa.
3. Allow the connection. This completes the connection process.

Connecting via Smart View

By installing and running the Smart View app on the mobile device, you can view the device screen on the TV, or play the device's multimedia content (videos, photos, and music) on the TV.

Go to Google Play, and search for and install Smart View on your mobile device. Smart View is a cross-platform multi-screen app that enables you to load the TV screen on a mobile device, share multimedia contents between two devices, and control the TV remotely. For more information, refer to the Smart View manual.

Connecting via Samsung Link

Samsung Link enables you to view/play photo, video and music files from a Samsung Link-enabled mobile device with ease. Also, use Samsung Link to play and view the content of a mobile device that has been registered to Samsung Link under your Samsung account, even if the mobile device and the TV are not connected to the same router or AP.

1. Run the Samsung Link app on the mobile device and then sign in with your Samsung account.

   To use Samsung Link, you have to sign in with a Samsung account. If you don't have a Samsung account, create one first.

2. Quickly access and play photo, video and music files from the mobile device running Samsung Link app under your Samsung account.

   For more information on using the Samsung Link app, refer to the Help section of the manual.

Connecting via Home Network (DLNA)

View/play photo, video and music files from a mobile device on the TV.

1. Connect both the TV and the mobile device to the same router or AP. A home network will be configured once the connections are established.

   Home Network (DLNA) enables content-sharing between the TV, computers and mobile devices connected to the same wired or wireless router.

2. Enable File Sharing on the mobile device. The mobile device's shared content can be viewed/played on the TV.

   As long as File Sharing is activated, unauthorised access may be allowed. Disable File Sharing if data access is not required.

Name of TV on Network

Network > **Device Name** Try Now

Choose or enter a TV name to be displayed on the network.

1. Select **Device Name** from the **Network** menu. A list will appear.
2. Choose a name from the list. Alternatively, select **User Input** to enter a name manually. You can view the specified TV name on the network.

Input Signal Selection

You can select a connected external device using the SOURCE button.

Connector names may vary depending on the model.

The following options are available in the Source List screen:

- **Options**

  Select a port connected to an external device, and press and hold Enter button or press the ⌄ button. The following functions are available:

  Available options for each connector may vary.

  – **Edit Name**: Rename devices connected to the TV for easier identification of external sources. For example, you can designate a computer connected to the TV via an HDMI-DVI cable as **DVI PC**. Alternatively, simply designate a computer connected to the TV via an HDMI cable as **PC**. You can also designate an AV device connected to the TV via an HDMI-DVI cable as **DVI Devices**.

  – **Information**: View detailed information about the connected devices.

  – **Anynet+ (HDMI-CEC)**: Displays a list of Anynet+ (HDMI-CEC)-compliant devices that are connected to the TV.

  This option is only available with **Anynet+ (HDMI-CEC)** set to **On**.

  – **Remove USB Device**: Used to safely remove a USB device connected to the TV.

  This option is only available when a USB device has been selected.

  – **Edit Device Type**: Changes the types of the external devices. Select an external device to change.

Connection Notes!

- The number of connectors and their names and locations may vary depending on the model.
- Refer to the external device's operating manual when connecting it to the TV. The number of external device connectors and their names and locations may vary depending on the manufacturer.

Connection notes for HDMI

- Use an HDMI cable with a thickness of 14mm or less.
- Using a non-certified HDMI cable may result in a blank screen or a connection error.
- Some HDMI cables and devices may not be compatible with the TV due to different HDMI specifications.
- This TV does not support HDMI Ethernet Channel. Ethernet is a LAN (Local Area Network) built with coaxial cables standardised by the IEEE.
- HDCP 2.2 is supported only by the TV's HDMI (MHL) port. HDCP is short for "High bandwidth Digital Content Protection" and is used for video copyright protection.
- Many computer graphics adaptors do not have HDMI ports, but have DVI ports instead. If your computer graphics adaptor has a DVI port, use an HDMI-to-DVI cable to connect the computer to the TV. For more information, refer to "Connecting with the HDMI-to-DVI Port."
- If you are using an HDMI adapter, the TV recognises the signal as an HDMI signal and may respond differently than it would to an MHL-to-HDMI cable connection.

Connection notes for audio devices

- For better audio quality, it is a good idea to use an AV receiver.
- Connecting a device using an optical cable does not automatically turn off the TV speakers. To turn off the TV's speakers, set **Speaker Select** (**MENU** > **Sound** > **Speaker Settings** > **Speaker Select**) to something other than TV Speaker.
- An unusual noise coming from the audio device while you are using it may indicate a problem with the audio device itself. If this occurs, ask for assistance from the audio device's manufacturer.
- Digital audio is only available with 5.1-channel broadcasts.

Connection notes for computers

- For the resolutions supported by the TV, refer to "Read Before Connecting a Computer (Supported Resolutions)."
- As long as file sharing is activated, unauthorised access may occur. When you do not need to access data, disable file sharing.
- Your PC and Smart TV must be connected on the same network.

Connection notes for mobile devices

- To use the Screen Mirroring function, the mobile device must support a mirroring function such as AllShare Cast or Screen Mirroring. To check whether your mobile device supports the mirroring function, please visit the mobile device manufacturer's website.
- To use Wi-Fi Direct, the mobile device must support the Wi-Fi Direct function. Please check if your mobile device supports Wi-Fi Direct.
- The mobile device and your Smart TV must be connected with each other in the same network.
- The video or audio may intermittently stop depending on network conditions.

Controlling the TV with a Keyboard

System > **Device Manager** > **Keyboard Settings** Try Now

You can use a keyboard to control the TV.

Certain models do not support USB HID class keyboards.

Connecting a Keyboard

Connecting a USB Keyboard

Plug the keyboard cable into the TV's USB port. A connection message appears on the screen.

Connecting a Bluetooth Keyboard

Availability depends on the specific model and area.

1. Place the Bluetooth keyboard into the standby status.

   Refer to the keyboard manual for information on putting the keyboard into the standby status.

2. Select **System** > **Device Manager** > **Keyboard Settings** > **Add Bluetooth Keyboard**. The **Add Bluetooth Keyboard** screen will appear and automatically scan for available keyboards. Try Now

   If your keyboard was not detected, position the keyboard close to the TV and then select **Refresh**. This initiates a scan for available keyboards again.

3. Select the Bluetooth keyboard from the scan list and then select **Pair and connect**. A number appears on the screen.

4. Enter the number on the Bluetooth keyboard.

   Select **Yes** to change the keyboard's options or **No** to leave them as they are.

Using the Keyboard

Use the following remote features with the USB or Bluetooth keyboard connected to the TV.

Keyboard	Remote Control Functions
Arrow Keys	Move the Focus
Windows Key	Open the Menu
Menu List Key	Open the On-Screen Remote
Enter Key	Select Item/Run Item
ESC	RETURN button
Number Keys	Enter Numbers
Page up / Page down	Scroll web browser pages up and down
F1	A
F2	B
F3	C
F4	D
F5	
F6	SOURCE
F7	Launch the Channel List
F8	button
F9 / F10	Volume button
F11 / F12	Channel button

The Options menu depends on the context.

Input Languages, Keyboard Type, and Switch Language Key

Select **System** > **Device Manager** > **Keyboard Settings** > **Keyboard Options**. Try Now

The following options are available:

- **Keyboard Language**

  If the keyboard supports multiple languages, choose which language you want to use from the list.

- **Keyboard type**

  Specify the type of language selected under **Keyboard Language**.

  The **Keyboard type** list varies depending on which language was selected under **Keyboard Language**.

- **Switch Input Language**

  If the keyboard supports multiple languages, choose from the list which key to use to switch between languages.

Controlling the TV with a Mouse

System > Device Manager > Mouse Settings Try Now

This TV can be operated with ease using a mouse instead of a remote control.

Certain models do not support USB HID class mice.

Connecting a Mouse

Connecting a USB Mouse

Plug the mouse cable into the TV's USB port. A connection message appears on the screen.

Connecting a Bluetooth Mouse

Availability depends on the specific model and area.

1. Place the Bluetooth mouse in standby status.

   Refer to the mouse manual for information on putting the mouse in standby status.

2. Select System > Device Manager > Mouse Settings > Add Bluetooth Mouse. The Add Bluetooth Mouse screen will appear and automatically scan for available mice. Try Now
3. Select the Bluetooth mouse from the scanned list, and then select Pair and connect. This pairs the Bluetooth mouse with the TV.

Using the Mouse

Once a USB or Bluetooth mouse is connected to the TV, a pointer will appear on the TV's screen. You can use this pointer to control the TV as you would a computer.

- **Selecting and Running an Item**

  Left-click on the mouse.

- **Displaying optional menus on the screen**

  Right-click the mouse. The TV displays the Tools buttons on the screen so that you can easily use the TV's functions.

  Select the volume/channel icon again to hide the buttons.

- **Scrolling the TV Menu or Screen**

  Move the mouse wheel up or down. This scrolls the TV menu or screen up/down.

- **Exiting the TV Menu or Feature**

  Left-click on the mouse at the blank place. This closes the menu.

Changing Mouse Buttons and Pointer Speed

Select **System** > **Device Manager** > **Mouse Settings** > **Mouse Options**. Try Now

The following options are available:

- **Primary Button**

  Choose which (left or right) button to use to select and run items.

- **Pointer Speed**

  Adjust the movement speed of the pointer that appears on the screen.

Entering Text Using QWERTY

A QWERTY keypad appears when you need to enter text (entering the network password, logging into your Samsung account, etc.), allowing you to enter text using your remote control.

Using Additional Functions

Select ⚙ on the QWERTY keyboard screen. The following options are available:

- **Recommend text**

  Enable/disable the Recommended Text feature. Enabling the **Recommend text** feature allows you to quickly enter text starting with the characters you typed in by displaying recommended words. To enter the word "Internet," for example, all you have to do is enter "In" and select the word "Internet" from the list of recommended words. The word is memorised so that you can enter the same text again more easily.

- **Reset recommended text data**

  Delete both the recommended words and the memorised words to clear the list.

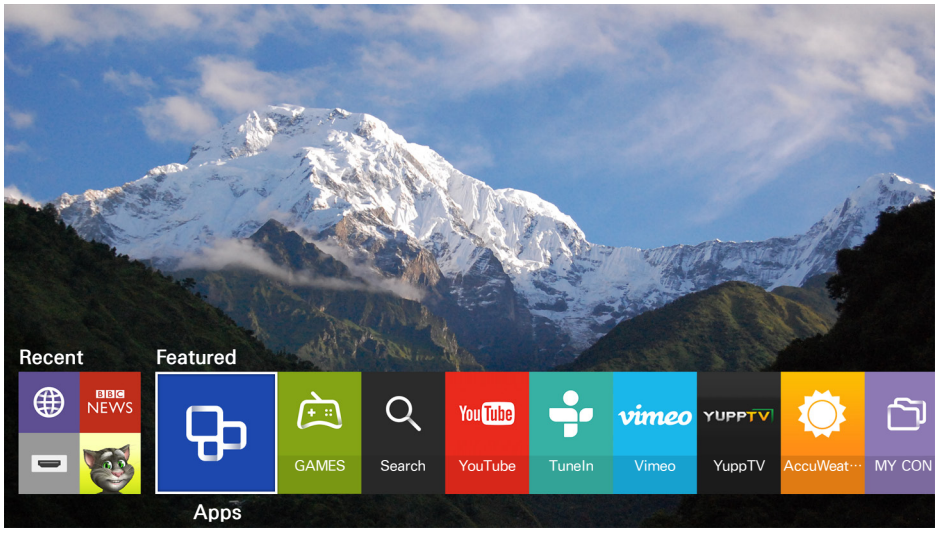
- **Predict Next Character (when using direction buttons)**

  Enable/disable the Text Prediction feature. Enabling the Text Prediction feature eliminates the need to find and select individual character keys. To enter the word "Internet," for example, select "I". A predicted word will then appear next to the I key. Simply select the predicted word to enter "Internet".

  ✎ This feature is limited to words that have previously been added to the dictionary.

Smart Hub

Smart Hub > Open Smart Hub Try Now



You can surf the web, download apps, and stay in touch with family and friends through social networking services with Smart Hub. In addition, you can enjoy photo, video, and music files stored on external storage devices.

Press the button to list or delete recently used apps or features. You can also set an item as a favourite. To delete all running apps, select Clear recent items. The favourites list items will not be deleted.

To run Smart Hub while you are using a service provided by Smart Hub, go to the same path as described above.

Launching Smart Hub automatically

Smart Hub > Auto-Start Settings > Smart Hub

You can start Smart Hub automatically when you turn on the TV.

Testing Smart Hub connections

Support > **Self Diagnosis** > **Smart Hub Connection Test** Try Now

When Smart Hub is not working, select **Smart Hub Connection Test**. The connection Test diagnoses the problem by checking the internet connection, your ISP, the Samsung server, and the Apps service.

- If Smart Hub continues to have problems after completing the test, contact your Internet Service Provider or a Samsung Service Centre.

Using the Smart Hub tutorial

Support > **Smart Hub Tutorial**

You can learn the basics of using Smart Hub and the Smart Hub service in detail.

Resetting Smart Hub

Smart Hub > **Reset Smart Hub** Try Now

You can remove the Samsung accounts saved in the TV and everything linked to them, including apps.

- Some of the Smart Hub services are for pay services. To use a for pay service, you must have an account with the service provider or a Samsung account. For more information, refer to "Using Smart Hub with a Samsung Account."
- To use this feature, the TV must be connected to the Internet.
- Some Smart Hub features may not be available depending on the service provider, language, or region.
- Smart Hub service outages can be caused by disruptions in your Internet service.
- To use Smart Hub, you must agree to the end user agreement and privacy policy. Otherwise, you will not be able to access the features and services associated with them. You can view the entire text of the **Terms & Policy** by navigating to **Smart Hub** > **Terms & Policy**. If you want to stop using Smart Hub, you can cancel the agreement. Try Now
- To view help information about Smart Hub, select the [?] button.

Using Smart Hub with a Samsung Account

Creating a Samsung account

Smart Hub > Samsung Account Try Now

Some of the Smart Hub services are for pay services. To use a for pay service, you must have an account with the service provider or a Samsung account.

You can create a Samsung account using your email address as your ID.

- To create a Samsung account, you must agree to the Samsung account end user agreement and privacy policy. Otherwise, you cannot create a Samsung account. You can view the entire content of the agreement by navigating to Smart Hub > Samsung Account > Terms and Conditions, Privacy Policy.
- You can also create a Samsung account at http://content.samsung.com. Once you have an account, you can use the same ID on both the TV and the Samsung website.

Creating a Samsung account

Smart Hub > Samsung Account > Create Account > Create a Samsung account

You can create the Samsung account by following the on-screen instructions. Once a Samsung account is created, you are automatically signed in to your Samsung account.

- If you want to review the Terms and Conditions, select View Details.
- If you want your account to be password protected, select Password (Security: High) in the field below the password field.
- If you want the TV to log you in to your account automatically when you turn the TV on, tick Sign me in automatically.

Creating a Samsung account using a Facebook account

- Depending on the specific mode and area.

Smart Hub > Samsung Account > Create Account > Create a Samsung account using Facebook

Enter your Facebook ID and password, and then follow the on-screen instructions to complete account setup. Once a Samsung account is created, you are automatically signed in to your Samsung account.

- Samsung account and Facebook account are automatically linked when you create a Samsung account with your Facebook account.

Signing in to a Samsung account

Smart Hub > **Samsung Account** > **Sign In**

You can automatically sign in to your Samsung account and use the Smart Hub feature.

Registering your Samsung account to the TV

If you already have a Samsung account, you can register that account to the TV. Select **+** > **Sign In** on the Samsung account screen and follow the on-screen instructions.

Signing in to a registered Samsung account saved on the TV

If you register a Samsung account, it is saved on the TV. To sign in to a registered Samsung account, just select it on the TV.

To change the sign in method, refer to "Changing and adding information to a Samsung account."

Linking your Samsung account to external service accounts

You can automatically log in to the linked apps' accounts when you log into your Samsung account by linking your Samsung account to an external service accounts.

To use **Link Service Accounts**, you must first log into your Samsung account.

Linking or disconnecting a service account

Smart Hub > **Samsung Account** > **Link Service Accounts**

- **Linking a service account**

  Select an account from the list and log in to the account by following the on-screen instructions. The service account is linked to the Samsung account.

- **Disconnecting a linked account**

  Select an account from the list and unlink the account by following the on-screen instructions.

Changing and adding information to a Samsung account

Smart Hub > Samsung Account > Edit profile

You can manage your Samsung account. Enter your password with the keyboard displayed on the TV's screen, and then select Done. You can perform the following functions on the screen.

To change the account information, you must be logged in to your Samsung account.

- Change Your Profile Image
- Selecting a Samsung Account sign-in method
- Turning auto login on or off
- Entering Basic User Information
- Subscribing to the Samsung e-Newsletter

Deleting all Samsung accounts from the TV

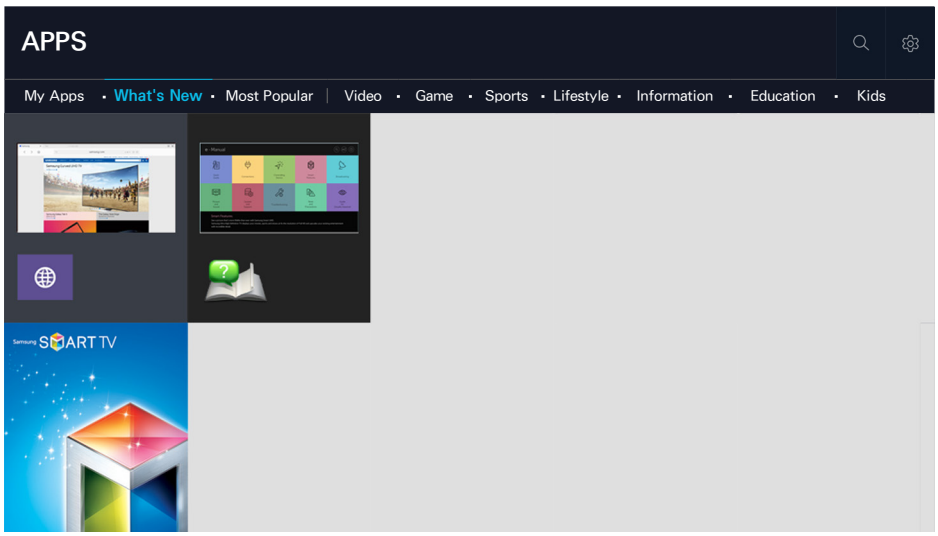
Smart Hub > Samsung Account > Remove Accounts from TV

You can remove all Samsung account and password information from your TV. The account information for any external accounts linked to the account is also removed from the TV.

To remove the account information, you must be logged in to your Samsung account.

Using the SAMSUNG APPS Service

Featured > Apps



Screen images may differ by model.

You can enjoy a wide range of content including news, sports, weather, and games by installing corresponding apps on your TV. You can download the apps from Smart Hub. Select a category from the top of the screen. You install and run the apps arranged by genres, such as **What's New**, **Most Popular**.

To use this feature, the TV must be connected to the Internet.

When Smart Hub is launched for the first time, the default apps are automatically installed. The default apps may differ with the region.

Managing Downloaded Apps with the pop-up Options menu

Move the focus to an app in the second row or below, and then press and hold the Enter button. The option menu appears displaying the following functions.

- **Open**
- **Delete**
- **More**
- **Reinstall**

The pop-up menu may differ with the apps.

Installing an app

Installing an app quickly

1. Select a category on the **Apps** screen.
2. Move the focus to an app, and then press and hold the Enter button. The context-sensitive menu appears.
3. Select **Download**. The selected app is installed on the TV.

- You can view installed apps on the **Apps** screen.
- You can also, install the app from detailed information screen.
- When the TV's internal memory is insufficient, you can install an app on a USB device.
- You can run an app installed on a USB device only when the USB device is connected to the TV. If the USB device is disconnected during an app is running, the app is terminated.
- You cannot run the app installed on the USB device on a PC or another TV.

Launching an app

You can launch an app by selecting an app on the **Apps** screen. The icons below appear in the selected apps and indicate the following:

- : The app is installed on a USB device.
- : The app has a password.
- : The app is installed.

Removing an app from the TV

Select an app to remove on the **Apps** screen and press and hold the Enter button to confirm it. If you want to remove multiple apps, select all the apps to delete and select **Options** from the top of the screen, and then select **Delete My Apps**.

Ensure that the related app data is also removed when you remove an app.

Locking and unlocking apps

Select apps to lock or unlock on the **Apps** screen and select **Options** from the top of the screen, and then select **Lock/Unlock My Apps**. All selected apps are locked or unlocked.

Updating apps

Select **Options** > **Update Apps** on the **Apps** screen. The TV searches for app updates, and then displays the list. After scanning, you can update some apps or all apps.

Rearranging apps

Select **Options** on the **Apps** screen, and then select **Sort By** to sort the apps by date, time or others.

Rating purchased apps

You can set the star score by using the left or right directional button on the detailed information screen.

Using other app features and functions

Smart Hub > **Auto-Start Settings** > **Channel-bound Apps & Ticker**

You can configure additional app features and functions.

Using channel bound apps

You can receive the information on TV programmes and other relevant services while viewing TV by using an app installed on the TV and linked to a specific channel.

This function is only available when an app supporting **Channel-bound Apps & Ticker** is installed on the TV.

Using the e-Manual

Launching the e-Manual

Support > e-Manual

You can view the embedded e-Manual containing information about your TV's key features. Press the E-MANUAL button.

1. Select a category from the left side of the screen. The contents of the selected category appear on the right side of the screen.
2. Select an item from the list. The corresponding e-Manual topic appears.

Alternatively, you can download a copy of the e-Manual from Samsung's website.

Words in blue (e.g., **Picture Mode**) indicate a menu item.

Using the buttons in the e-Manual

(**Search**): Brings up the search screen. Enter a search term, and then select **Done**. Select an item from the search result to load the corresponding page.

(**Index**): Brings up the index screen. Select a topic from the list to navigate to the relevant page.

(**Recent pages**): Displays a list of previously read pages. Select a page. The e-Manual jumps to the selected page.

Accessing the associated menu screen from an e-Manual topic page

(**Try Now**): Allows you to access the corresponding menu item and try out the feature right away.

(**Link**): Allows you to access the corresponding reference page.

The e-Manual cannot be accessed from some menu screens.

Updating the e-Manual to the latest version

You can update the e-Manual in the same way you update apps.

Using the web browser

Web browser depending on the specific area.

You can surf the Internet on the TV in the same manner as you would using a PC – even while watching a TV programme using PIP. Select **Help** to view the information of the Internet web browser.

For a more convenient web browsing experience, use a keyboard and mouse.

The browsing page may differ from that on a PC.

Browsing preferences

Select ☰ > **Settings**. Configure the browsing settings to meet your needs.

- **Bookmarks**

  Move to the Bookmarks screen. On this screen, add the current page to Bookmarks, or move, edit, or delete a bookmarked page.

- **History**

  Easily access visited pages by navigating the History screen.

- **Zoom**

  Zoom in or out of the current web page.

- **View Certificates**

  You can view the certificate about the site.

- **Settings**

  You can use the following contents in settings.

  - **General**

    Hides taps or menu bars automatically after a period of inactivity, or resets all user settings.

    The bookmarks and browsing histories that you made will not be reset.

  - **Home Page**

    Sets the homepage when you launch the web browser.

  - **Search Engine**

    Searches for information that you entered and display the result web pages.

  - **Privacy & Security**

    Prevents you from accessing inappropriate web pages or sets not to save the browsing history.

  - **Blocked pages**

    Blocks or unblocks pages. You can manage a list of pages to block.

  - **Approved pages**

    Limits to use only the page that you have approved. To use this option, set a password. You can add or remove the approved pages.

  - **Encoding**

    Set the encoding to **Auto**, or selects an encoding method from the list.

  - **About**

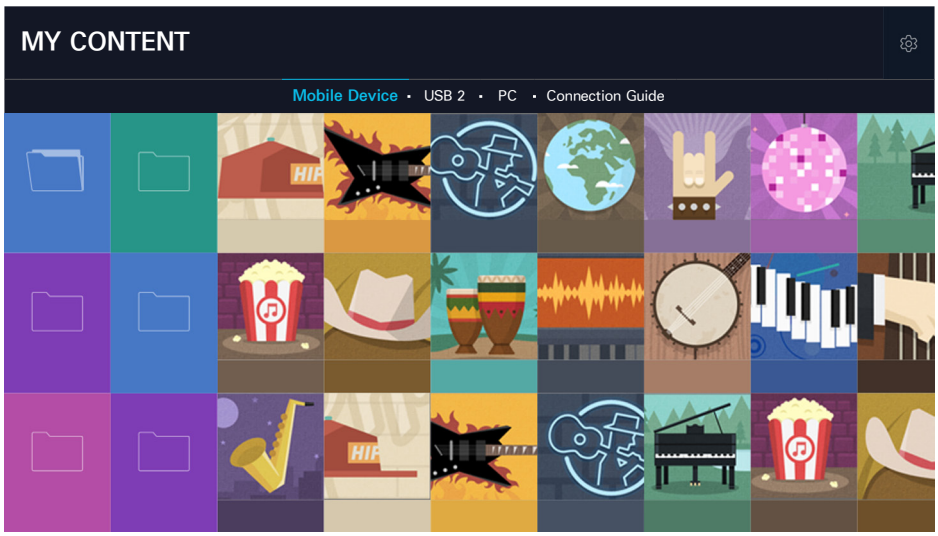
    Displays the current version of Web Browser.

- **Help**

  This will familiarise yourself with the basics of Web Browser.

Using the MY CONTENT Service

> Featured > MY CONTENT Try Now



Screen images may differ by model.

You can play the media content saved on the storage devices, such as a USB device, mobile device, and camera, in the TV. When you connect a storage device to the TV, the TV displays a tab with the name of the connected device. Select the tab to confirm the content saved on the storage device.

You cannot play media content if the content or the storage device is not supported by the TV. For more information, refer to "Read Before Playing Photo, Video, or Music Files."

Backup important files before connecting a USB device. Samsung is not responsible for damaged or lost files.

Read before playing media content

To connect the TV to a computer, refer to "Connecting to a Computer."

To connect the TV to a mobile device, refer to "Connecting with a Mobile Device."

To connect the TV to a USB or external storage device, connect the device to the TV's USB port.

Playing multimedia content in a computer or mobile device

Before connecting to a computer or mobile device, configure the network settings.

Connecting with a computer or mobile device

> Featured > MY CONTENT

To play multimedia content located on a computer or mobile device on the TV, you must allow the connection with the computer or mobile device on the TV.

1. Connect a computer or mobile device. The TV displays the device's name and lists the media contents in the device.
2. Select the media content to play from the list. The selected media content plays.
3. To stop playing media contents, press the ■ or RETURN button.

Alternatively, move to the media content you want to play, and then press the ▶ button to play the content.

To connect a computer through your home network, refer to "Connecting to a Computer."

To connect a mobile device through Smart View 2.0, refer to "Connecting with a Mobile Device."

The content shared by a computer or a mobile device may not be played depending on the encoding type and file format of the content.

The content may not be played smoothly depending on the network status. If this occurs, transfer the content to a USB storage device, and then play the content from the device.

Playing media content saved on a USB device

1. Select MY CONTENT. The USB devices connected to the TV are listed.
2. Select the media content to play from the list. The selected media content plays.
3. To stop playing media contents, press the ■ or RETURN button.

Alternatively, if you select a USB device on the Source screen, the TV jumps to the MY CONTENT screen automatically.

Safely Removing a USB Device

1. Press the SOURCE button. The Source screen appears.
2. Select the USB device to remove and press and hold the Enter button.
3. Select Remove USB Device in the list.

Buttons and functions available while viewing photos

Press the Enter button while viewing photos to display available options. You can also view the thumbnails of photos saved on the TV while viewing photos. The options disappear when you press the RETURN button.

- **Pause** / **Play**

  Start or stop the slideshow. Using slideshow, you can play all the photos in a folder one by one.

- **Previous** / **Next**

  View the previous or the next photo.

- **Options**

Function	Description
Slideshow Speed	Sets the slideshow speed.
Slideshow Effect	Applies transition effects for the slide show.
Rotate and Zoom	Zooms in by up to a factor of 4. Rotates the photo.
Background Music	Plays background music while the TV displays photos. The music files must be saved in the same USB device as the photo file. When background music plays, the music icon appears on the screen. Using the music icon, you can pause the current music file or play another music file.
Speaker List	Gives you a choice of which speakers to play the background music through. TV Speaker: Plays the background music through the TV speakers. Audio Out: Plays the background music through the external speakers. Speaker Settings: Plays the background music through a speaker that you want. Sound Mode: Changes the sound mode during playback when you play the music through the TV speakers.
Sound Mode	Changes the sound mode setting. This mode is supported only when background music is playing.
Picture Mode	Changes the picture mode setting.
Information	Displays detailed information about the current photo.

Buttons and functions available while viewing videos

Press the Enter button while viewing videos to display available options. Preview images of the frames at the same time intervals are displayed so that you can move to a specific frame easily. The options disappear when you press the RETURN button.

- **Pause** / **Play**

  Pauses or plays the video. You can use the following functions when the video is paused. With the video paused, the TV does not play audio.

  - **Step**: Scans the paused video one frame at a time by pressing the ❚❚ button.
  - **Slow Motion**: Plays the video in slow playback speed (1/8, 1/4, 1/2) by pressing the ▶▶ button.

- **Rewind** / **Fast Forward**

  Rewinds or fast forwards the video. To increase the rewind or fast forward speed up to 3 times faster than normal, select the button repeatedly. To restore normal playback speed, press the ▶ button.

- **Previous** / **Next**

  Plays the previous or next video. Press the |◀◀ button twice to play the previous video. Press the |◀◀ button once starts the current video from the beginning.

  Press the ▶▶| button to play the next video.

- **Repeat**

  Plays the current file repeatedly or all files in the same folder repeatedly.

- Options

Function	Description
Picture Size	Changes the size of the screen. The supported picture sizes differ with the video.
Subtitle	Controls the subtitles of the video. Subtitle: Turns the subtitles on or off. Language: Sets the subtitle language. Sync: Adjusts the synchronisation when the video and the subtitles are not synchronised. Reset Sync: Resets the subtitle synchronisation adjustment to 0. Size: Changes the font size for the subtitles. Encoding: Changes the encoding language when the subtitles are displayed incorrectly.
Rotate	Rotates the video.
Picture Mode	Changes the Picture Mode setting.
Speaker List	TV Speaker: Plays the video sound through the TV speakers. Audio Out: Plays the video sound through the external speakers. Speaker Settings: Plays the TV sound through a speaker that you want. Sound Mode: Changes the video sound mode during playback when you play the video sound through the TV speakers. (Sound > Sound Mode)
Sound Mode	Changes the Sound Mode setting.
Audio Language	Selects a audio language. This function is only available when the video supports multi-track sound.
Information	Displays detailed information about the video.

Buttons and functions available while playing music

- **Pause** / **Play**

  Pauses or resumes the music.

- **Previous** / **Next**

  Plays the previous or next music file. Press the ⏮ button twice to play the previous music file. Press the ⏮ button once starts the current music file from the beginning.

  Press the ⏭ button to play the next music file.

- **Repeat**

  Plays the current music file repeatedly or all music files in the same folder repeatedly.

- **Shuffle**

  Plays the music files in random order.

- **Speaker List**

  - **TV Speaker**: Plays the music through the TV speakers.
  - **Audio Out**: Plays the music through the external speakers.
  - **Speaker Settings**: Plays the music through a speaker that you want.
  - **Sound Mode**: Changes the sound mode during playback when you play the music through the TV speakers. (**Sound** > **Sound Mode**)

- **Picture Off**

  Plays the music files only with the screen off.

Listening to music in HD quality

You can enjoy HD music in HD native quality. Move to **MY CONTENT** service and select a music file to play in HD quality.

- Set **HD Audio** (**Sound** > **Additional Settings** > **HD Audio**) to **On** before playing HD Audio format.
- HD icon is displayed next to HD music files in the playlist.
- Select the music file, and then select ▶ to play it.
- When you set **HD Audio** mode to **Off** during playback, the next music file is played with standard audio signals.
- Standard audio signals are sampled at 48 kHz while HD audio signals are sampled at 96 kHz.
- Some S/PDIF receivers may not be compatible. For such incompatible receivers, deactivate **HD Audio** mode and use normal audio mode instead.
- Some external audio players connected via HDMI, Bluetooth, or Wi-Fi networks are not able to play the HD audio signals.

Functions on the media content list screen

You can use the following functions on the media content list screen of a storage device.

- **Filter By**

  Filters the media content to display the type of media you want.

- **Sort By**

  Sorts the content list. The sorting methods change depending on the type of content you have selected.

  This function is not available when **Filter By** is set to **All**.

- **Delete**

  Deletes the recorded media content from the media content list.

  This function is not available when **Filter By** is set to **All**.

- **Play Selected**

  Plays the selected media content from the media content list.

  This function is not available when **Filter By** is set to **All**.

Resetting All Sound Settings

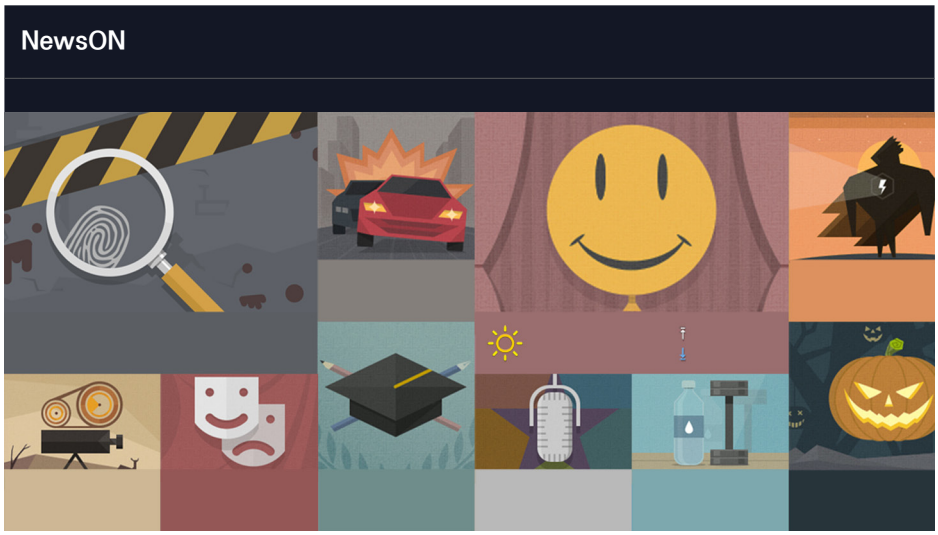
Sound > **Reset Sound** Try Now

Use to reset all sound settings to the factory defaults.

Using the NewsON Service

This service or some of functions of it may be not available in some countries or region.

> Featured > NewsON



Actual menu screen may differ depending on the TV model.

NewsON provides a real-world service that informs users of news and weather-related information in one place without the need for a newspaper, smartphone, or computer.

NewsON users can find daily information on a wide variety of topics in a smart and convenient way. Updated in real time, NewsON informs users of the latest headlines, top stories, popular issues, and weather forecasts.

News

News articles are updated in real time. Simply select an article on the screen. The selected article will be displayed on the screen in details.

For longer articles, press ∧ or ∨, on the remote control to scroll the screen.

To move to a different article, press to the < or >, on the remote control.

Weather

Weather information is provided for major cities of the user's country. Select a weather-related item on the screen. The selected item will be displayed in details.

Digital Broadcast Information at a Glance

Broadcasting > Guide Try Now Try Now

The Guide provides an overview of each digital channel's programme lineup. You can check the programme schedules and set up a Schedule Viewing or Schedule Recording.

Press the GUIDE button on the standard remote.

The information in the Guide is for digital channels only. Analogue channels are not supported.

Using the Guide

To access the Guide functions after launching the Guide, press and hold the Enter button on the remote control. A popup window listing the following functions appears.

- **Navigating the Programme Schedule**

  Press to the ◀◀, ▶▶ button to navigate the programme schedule by 24 hours. You can only view the future programme schedule.

  It is available for moving the page using the ∧, ∨ button.

Move to the programme schedule and then press and hold the Enter button. The following options are available:

- **Changing the Channel List**

  If you select Channel Filter, you can change the channels displayed in the channel lists.

- **Moving to the Schedule Manager**

  You can move to the Schedule Manager screen.

- **Adding Favourites**

  Click Edit Favourite Channels to add the selected programme to the Favourites.

- **Viewing Detailed Information**

  View detailed information about the selected programme. The programme information may vary depending on the type of incoming signal and may not be available at all for certain programmes.

  – Select a current programme on another channel and select View Details to Watch or Record the programme.

  – Select an upcoming programme and select View Details for Schedule Viewing or Schedule Recording.

  You can only view programmes scheduled after the current time.

Checking current programme info

To get information about a show that you are watching, use one of the following ways:

- Standard remote control: Press the INFO button.

To instantly record the current programme, select it in the Programme Info window.

To view information about upcoming programmes, use the < and > buttons.

To set up a Schedule Viewing or Schedule Recording for a programme, select that programme.

To view the programme info, you must first set the TV's Clock (System > Time > Clock).

The programme information may differ with the type of incoming signal and may not be available at all for certain programmes.

For more information on Schedule Viewing, refer to "Setting Up a Schedule Viewing".

For more information on Schedule Recording, refer to "Recording Programmes".

Change the Broadcast Signal

Broadcasting > Aerial

Choose your preferred method of receiving digital broadcasts.

Digital Signal Info and Strength

Support > Self Diagnosis > Signal Information Try Now

Select Support > Self Diagnosis > Signal Information. Displays the digital channel's signal information and strength.

If your TV is attached to a separate, over-the-air antenna, you can use the signal strength information to adjust the antenna for increased signal strength and improved HD channel reception.

This is only available for digital channels.

Recording Programmes

Web browser depending on the specific area.

You can record current and upcoming programmes using a USB device instead of a video recorder.

We recommend a USB hard disk drive with a minimum speed of 5,400rpm for TV recording. USB memory sticks are not supported.

Read all precautions before using recording.

Recording Programmes

You can record current and upcoming programmes.

Instant Recording

Press the ● on remote control to begin recording the current programme right away.

Remote control depending on the specific model.

The Instant and Schedule Recording options from the Guide

Select a current programme from the **Guide** and then select **Record**.

You can instantly start recording the programme. Alternatively, select a programme that will air in the future.

The Instant and Schedule Recording options from the Programme Info

Select Enter button to display information about the current programme. In the information screen, select a programme that is currently airing to start recording it right away. Alternatively, press <, > button and select a programme that will air in the future to record it.

The Schedule Recording option on a Specified Date and Time

1. Select **Broadcasting** > **Schedule Manager**
2. Select **Schedule** from the **Schedule Manager** to bring up a pop-up menu. Select **Schedule Recording**.
3. Specify the **Source**, **Channel**, **Repeat**, **Start Time**, and **End Time** options for the programme you want to record, and then select **OK** to finish.

Buttons and Functions Available While Recording a Programme

Press Enter button while recording a programme. The following buttons will appear as well as the recording progress bar.

- **Information**

  This displays detailed information about the programme being recorded.

  > The programme information may differ depending on the broadcasting signal and may not be available at all for certain programmes.

- **Recording Time**

  You can select the recording time.

- **Stop Recording** / **Go to Live TV**

  Stops recording. / Shifts viewing to live TV.

Managing the Schedule Recording List

Broadcasting > **Schedule Manager**

You can change the settings of scheduled recording sessions or cancel scheduled sessions altogether.

Deleting Schedule Recording Sessions

You can delete scheduled recording sessions.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Delete**. This cancels the selected recording session.

Editing Schedule Recording Sessions

You can change the settings of scheduled recording sessions.

1. Select **Broadcasting** > **Schedule Manager**.
2. Select a session from the **Schedule Manager**. A pop-up window appears.
3. Select **Edit** and change the settings of the selected session.
4. Once finished, select **OK**. This applies the changes you made to the selected recording session.

Viewing Recorded Programmes

1. Press SOURCE button.
2. Select a USB recording device. A list of recordings appears.
3. Select a recording file from the list or select ▶ to play the selected file.

Available Buttons and Features while Playing Recordings

Press Enter. Playback controls will appear. To hide the controls, press RETURN or RETURN-EXIT button.

Buttons that appear are different depending on the file being played.

- **Zoom**

  You can pause the current file (recorded programme) and zoom in any sections of the screen.

  Press the A button for easier use.

  You can only use this function for programmes recorded in **Sports Mode**.

- **Pause** / **Play**

  Pause the file (recorded broadcast) or resume if already paused.

  When the video is paused, you can use the following functions. However, audio will not be heard while the video is paused.

  – **Step**: Press ❚❚ button to scan through a video one frame at a time.

  – **Slow Motion**: The ▶▶ plays the video back at 1/4 the normal speed.

  Buttons that appear differ with the file being played.

- **Rewind** / **Fast Forward**

  Rewind or Fast Forward the recording file (recorded programme). Repeatedly select the button to make the rewind/fast forward speed faster by up to 5 times. To restore normal playback speed, press the ▶ button on the standard remote.

- **Previous** / **Next**

  To play the previous file (recorded programme), press ⏮ twice. Selecting ⏮ once reloads the current video from the beginning.

  To play the next file (recorded programme), press ⏭.

  This function is not available when the programme is recorded in **Sports Mode**.

- **Highlights Player**

  Select **Highlights Player** to view highlights from the current recording.

  This feature is only available for programmes that were recorded in **Sports Mode** and along with highlight data have been saved.

- **Live TV**

  This function enables the PIP feature so that you can watch a live programme through PIP.

  Channels cannot be changed.

  You can only use this function for programmes recorded in **Sports Mode**.

  This function is only available on certain models in specific geographical areas.

- **Settings**

Function	Description
Subtitle Settings	Subtitle: Turn the subtitles On or Off. Subtitle Language: Used to change the language. This option works only when the video supports subtitles display.
Picture Size	Used to change the size of the screen. The supported picture sizes vary depending on the video.
Picture Mode	Change the Picture Mode setting.
Sound Mode	Used to change the Sound Mode.
Audio Language	Choose a desired audio language. This option works only when the video supports multi-track sound. Depending on the specific model.
Information	Displays detailed information about the current file.

Managing Recorded Files

1. Press SOURCE button.
2. Select a USB recording device. A list of recordings appears.

This function is only available on certain models in specific geographical areas.

Saved File List Features

- **Sorting the Saved File List**

  Sorting with **Sort By**: Select **Sort By** at the top of the screen and then select a viewing mode. The list is sorted based on the selected viewing mode.

  Sorting with **Filter**: Select **Filter** at the top of the screen and then select a filter. The list is refreshed to only show files that match the selected filter.

- Options

Function	Description
Play Selected	Select files from the file list and then select **Play**. You can create a playlist.
Delete	Deletes recording files. Select the files and then select **Delete**. This deletes all selected files.

Setting Up a Schedule Viewing

Configure the TV to show a specific channel or programme at a specific time and date.

To set up a **Schedule Viewing**, you must first set the TV's clock. Go to **Clock** (**System** > **Time** > **Clock**).

Setting up a schedule viewing for digital channel

You can set up schedule viewing for programmes on digital channels on the following screens:

- **The Guide Screen**
- **The Programme Info Screen**

The Guide screen

To set up a scheduled viewing on the **Guide** screen, follow these steps:

1. Press the **GUIDE** button on the standard remote.
2. On the Guide screen, use your remote control to highlight, and then select a programme you would like to view.
3. On the Information Screen that appears, select **Schedule Viewing**. The programme is scheduled for viewing. The **Guide** screen re-appears.

The Programme Info screen

To set up a **Schedule Viewing** or **Schedule Recording** on the **INFO** screen, follow these steps:

1. Change the channel to the channel that will be broadcasting the programme you want to schedule.
2. Press the **INFO** button on the standard remote.
3. Move right to see programme information for later broadcasts. The programme information for the programmes that will be broadcast later on that channel is displayed on the screen.
4. Highlight and then select the programme you want to schedule or record. The Information screen appears.
5. Select **Schedule Viewing** or **Schedule Recording**. The programme is scheduled for viewing or recording. Press the **RETURN** or **RETURN-EXIT** button on your remote.

Setting up a schedule viewing for analogue channel

Broadcasting > Schedule Manager Try Now

The Schedule Viewing function for programmes on analogue channels can be set up by specifying the time and date.

1. Select Broadcasting > Schedule Manager.
2. Select Schedule from the Schedule Manager to bring up a pop-up menu. Select Schedule Viewing.
3. Specify the Source, Channel, Repeat, and Start Time options for the programme you want to watch and then select OK to finish.

Cancelling a schedule viewing

To cancel a specific scheduled viewing, follow these steps:

1. Press the MENU button on the standard remote and then select Menu > Broadcasting > Schedule Manager.
2. On the Scheduled screen, select the scheduled viewing. A pop-up menu appears.
3. Select Delete to cancel.
4. Select OK on the "Remove this show" pop-up. The scheduled viewing is removed.

You can set up a maximum total of 30 Schedule Viewing and Schedule Recording entries.

Editing a schedule viewing

To edit the time, days, or channel of a schedule viewing, follow these steps:

1. Press the MENU button on the standard remote and then select Menu > Broadcasting > Schedule Manager.
2. On the Scheduled screen, select the scheduled viewing. A pop-up menu appears.
3. Select Edit.
4. Change the time, days, or channel. Select OK when done.

Using Timeshift

Timeshift lets you pause and rewind live TV as you would a DVD. Activating **Timeshift** disables the Broadcasting option.

Timeshift requirements:

Read all precautions before using the Timeshift function. For more information, refer to "Before Using the Recording and Timeshift Functions."

This function is only available on certain models in specific geographical areas.

- A USB recording device must be connected to the TV in order to use **Timeshift**.
- We recommend a USB hard disk drive with a minimum speed of 5,400rpm for use with the TV's **Timeshift** feature. USB memory sticks are not supported.
- Read all precautions before using the **Timeshift** function.

Press the ▶ button while watching TV to activate the **Timeshift** function. This activates **Timeshift** and displays a progress bar and the following buttons at the top of the screen:

- **Information**

  Displays detailed information about the current programme.

  The programme information may vary depending on the type of incoming signal and may not be available at all for certain programmes.

  This button is only available while watching a live programme.

- **Go to Live TV** / **Stop Timeshift**

  Watches the live TV or Exits the **Timeshift**.

- **Pause**

  Pauses the screen.

  The following features are available while paused. However, audio is not supported while the video is paused.

  - **Step**: ❚❚ button Scans through a video one frame at a time.
  - **Slow Playback**: Select ◀◀ / ▶▶ to play the video back at 1/4 the normal speed.

- **Rewind** / **Fast Forward**

  Slows down or speeds up playback by a factor of up to 7. To restore the normal playback speed, press ▶ button on the standard remote.

  Fast Forward cannot be used while watching the Current Programme.

- **Channel List**

  Displays the channel list.

- **Tools**

  You can launch the **Tools** menu. Open the **Tools** menu to access the context menus available in Timeshift mode.

Using the Channel List

Broadcasting > Channel List Try Now

Launch the Channel List while watching TV to change channels or to see what's on other channels.

For Standard remote control please follow Broadcasting > Channel List operate it.

Select a channel from the Channel List to jump to it right away. To quickly scroll through the list, use the channel up/down buttons. This moves the focus one page at a time.

The Channel List screen contains the following icons:

- A : An analogue channel
- : A favourites channel
- : A locked channel

- **Using Options**

  Press < button to select Options. The following options are available:

- History

  Displays a list of channels that you viewed recently.

- Add a New List

  Allows you to creating a new channel list by adding channels from a favourites list, analogue, or your interested category.

- Favourites 1 ~ Favourites 5

  Displays the selected channel list. You can add or remove channels to or from the list.

- Options

  The following options are available:

Function	Description
Aerial	Choose between Terrestrial, Cable.
Sort	Sort the list by Channel Number or by Name. (Digital channels only)
Edit Channel Lists	You can edit your channel lists. Allows you to rearrange the order of channels in the channel list or remove channels from the channel list.
Edit Channel	You can remove or rename the channels.
Edit Favourites	Designate favourites channels.

- **Changing to Favourites**

  Press < button to select Favourites 1 through Favourites 5. This shows the selected list's channels. However, a Favourites list can only be selected if it contains at least one favourites channel. If you haven't created a Favourites list yet, you need to create one first.

Registering, Removing, and Editing Channels

Broadcasting > Edit Channel Try Now

Remove channels from the index of channel restore removed channels, and rename analogue channels. The Edit Channel screen icons indicate the following:

- A : An analogue channel
- : A favourites channel
- : A locked channel

Registering and Removing Channels

Broadcasting > Edit Channel

Removing Registered Channels

Remove registered channels from the index.

1. Select the channels you want to remove. Unselect channels by choosing them again. To select all the channels, select Options from the bottom of the screen and then select Select All from the list.
2. Once you have made your selection, select Delete from the bottom of the screen to remove the selected channels.

Editing Registered Channels

Broadcasting > **Edit Channel**

Select **Options** at the bottom of the screen to access the following options. However, the available options may vary depending on the broadcast signal.

- **Select All** / **Deselect All**

  Selects all channels displayed in the **Edit Channel** screen.

- **Sort**

  (Digital channels only)

  Change the list ordered by Channel **Name** or **Number**.

- **Aerial**

  Choose between **Terrestrial**, **Cable**.

- **Category**

  If you select a **Category**, its channels appear in the list among the TV's channels.

- **Edit Favourites**

  Organize favourites lists to find favourite channels and switch between channels more easily.

- **Rename channel**

  Rename Analogue Channels. The new name can be up to 5 characters long.

- **Information**

  View detailed information about the current programme.

Enabling/Disabling Password Protection on Channels

Broadcasting > **Edit Channel**

You can lock channels you don't want your children to view.

To enable password protection, set **Channel Lock** to **On**. First, navigate to **Broadcasting** > **Channel Lock** and set it to **On**.

Locking/Unlocking Channels

Select channels from the **Edit Channel** screen and then select **Lock** or **Unlock** at the bottom of the screen. When the password entry window appears, enter the password. This locks or unlocks the selected channels.

Creating a Personal Favourites List

Broadcasting > Edit Favourites Try Now

You can designate frequently watched channels as favourites. Favourites channels are highlighted in the Edit Channel and Channel List screens with the ♥ symbol. You can create up to 5 favourites channel lists.

Registering a Channel as Favourites

Registering Multiple Channels as Favourites

It's possible to register multiple channels as favourites at the same time.

1. Select Broadcasting > Edit Favourites.
2. Select Category from the bottom of the screen to change the channel list to the one containing that channels you want to register.

   Recently Viewed and Most Viewed are only available if they contain channels.
3. Select the channels from the list in the middle of the screen.
4. Select Change Fav. and then change the Favourites 1 to the Favourites 5 you want to use.
5. Select Add.

Viewing Favourites List Channels Only

It's possible to flip through Favourites list channels using only the channel up/down buttons.

A Favourites list can only be selected if it contains at least one favourites channel.

1. Run **Channel List**. (**Broadcasting** > **Channel List**).
2. Press < button to select **Favourites 1** through **Favourites 5**.
3. Choose a channel from the selected Favourites list. This changes the channels and **Channel List** changes to the selected Favourites channel.

Editing a Favourites List

Broadcasting > **Edit Favourites**

You can rename and edit Favourites lists.

Using the Edit Favourites screen menu items

Select **Options** from the bottom of the **Edit Favourites** screen to access the following options:

- **Select All** / **Deselect All**

  You can select all channels. / You can cancel the channels you selected.

- **Copy to Favourites**

  Copy channels from one favourites channels list to another.

  This can only be used when the focus has selected a channel registered to a Favourites list.

- **Rename Favourites**

  Rename an existing favourites channels list.

  This can only be used when the focus has selected a channel registered to a Favourites list.

- **Sort**

  Change the list ordered by Channel **Name** or **Number**. This function is not available on analogue channel.

- **Aerial**

  Choose between **Terrestrial**, **Cable**.

- **Edit Channel**

  You can manage the channels saved on the TV.

Removing Registered Channels from a Favourites List

Remove channels from a favourites channels list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. Select the channels you want to remove from the selected Favourites list.
3. Select **Delete**.

Rearranging a Favourites List

Rearrange the order of the channels in a Favourites Channels List.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. From the selected Favourites list, select the channels you want to rearrange.
3. Select **Change order** from the bottom of the screen and then rearrange the selected channels. Press Enter button to finish.

Renaming a Favourites List

Rename an existing favourites channels list.

1. Select **Change Fav.** at the bottom of the screen and then change the Favourites list to the Favourites list you want to use.
2. From the selected Favourites list, select the channels you want to rename.
3. Select **Options**. A list appears.
4. Select **Rename Favourites** from the list. A pop-up window appears. Rename the list in the pop-up window. The new name can be up to 20 characters long.

Copying a Favourites List to a Different Favourites List

Copy channels from one favourites channels list to another.

1. Select **Change Fav.** and then change the Favourites list on the side of the screen to the Favourites list you want to use.
2. From the Favourites list displayed on the side of the screen, select all the channels you want to copy.
3. Select **Options**. A list appears.
4. Select **Copy to Favourites** from the list. A pop-up window appears.
5. From the pop-up window that appears on the screen, select the Favourites lists you want to copy the selected channels to. This copies the selected channels to the selected Favourites lists.

Copy to Favourites is only available when there are channels in the Favourites list.

Adding Realism to Sports

System > Sports Mode Try Now

Sports Mode enables optimal picture and sound settings for sports events, making them appear and sound as if you were actually there. In addition, it will be possible to use video recording and time shift functions at the same time while watching a sports event and manually or automatically designated highlight scenes if a recording device is connected to the TV when you are using Sports Mode.

- For more information about recording a programme and using a recording device, refer to the "Recording Programmes" section.
- For more information about the "Time Shift" feature, refer to the "Using Timeshift" section.
- This function is only available on certain models in specific geographical areas.
- Using the colour buttons in Sports Mode may be restricted while using Data Service.

Enabling Sports Mode

System > Sports Mode > Sports Mode

Select System > Sports Mode and then set Sports Mode to On. Picture and sound settings of the TV are automatically optimised for sports events.

- Enabling Sports Mode changes the Picture Mode to Stadium and the Sound Mode to Stadium, and disables some Picture and Sound menus.
- Press Sports Mode button on standard remote control while watching TV to activate/deactivate Sports Mode.

Extracting Highlights Automatically

System > Sports Mode > Auto Highlights Try Now

Select System > Sports Mode and set the Auto Highlights to On. You can set the TV to automatically save highlights without user intervention.

However, Auto Highlights is not available with these TV operations:

- Recording two channels simultaneously
- While Auto Description is active
- Switching the input signal using the SOURCE button

- The Auto Highlights performance depends on the signal characteristics.
- It is advisable to use Auto Highlights only while watching a soccer/football game. Using this for other sporting events may display irrelevant picture frames.

Functions Available in Sports Mode

Press Enter button. The following buttons will appear.

- **Zoom**

  You can pause the current video and zoom in on one of 4 different sections of the screen. Pan the zoomed-in image using ∧, ∨, <, > buttons.

  - To launch this function easily, select or press the A button.
  - This function is not available when **PIP** or **MY CONTENT** is active.
  - This function is not available when **Data Service** is active.

- **Manual Highlight**

  Pressing this button saves 10 seconds of video leading up to that point and 10 seconds of video that follows as a highlight.

  - This function can also be accessed using the B button.
  - Available only while recording is in progress.
  - Also possible to configure the TV to automatically save highlights without user intervention. Select **System** > **Sports Mode** and then set **Auto Highlights** to **On**.

- **Stop Recording** / **Go to Live TV**

  Use this button while watching a live programme to stop recording it. Use while watching a recorded programme to watch a live programme.

  - Available only when recording is in progress.

- **Record**

  Start recording the sports event being watched.

  - This function is only available when the recording function is supported.

- **Highlights Player**

  Use **Highlights Player** to view manually or automatically saved highlight segments of the recording.

  However, **Highlights Player** is not available with these TV operations:

  - Recording two channels simultaneously
  - While Auto Description is active
  - Switching the input signal using the SOURCE button

  This function is only available when a recording is in progress.

  This function is only available while you are watching a recorded programme.

  Available only when recording is in progress.

- **Watch Live TV at the same time**

  Select while viewing a recorded programme to watch live TV on a PIP window. Press once more to exit PIP mode.

  However, **Watch Live TV at the same time** is not available with these TV operations:

  - Recording two channels simultaneously
  - While Auto Description is active
  - Switching the input signal using the SOURCE button

- **More Info**

  Displays detailed information about the current programme.

  This function is only available when a recording is in progress.

Viewing a Sports Event Recorded in Sports Mode

View recorded sports events using the **USB Drive** option in the **MY CONTENT** screen.

This function is only available on certain models in specific geographical areas.

For more information, refer to "Viewing Recorded Programmes."

TV-Viewing Support Features

Showing Subtitles

System > Accessibility > Subtitle

Show subtitles. Subtitles will be displayed when watching a broadcast that supports subtitles. Switches subtitles On or Off.

Subtitles may not be displayed by programmes that do not support subtitles.

DVD subtitles are only available if the DVD player is connected to an external input connector.

- Subtitle Mode

  Set the subtitle mode.

- Subtitle Language

  Set the subtitle language.

  The TV cannot control or modify DVD or Blu-ray subtitles. To control DVD or Blu-ray subtitles, use the subtitle feature of the DVD or Blu-ray player and the player's remote control.

Subtitle Options

System > Accessibility > Subtitle

Select a subtitle mode. The list of modes may vary depending on the broadcast.

- Primary Subtitle

  Set the primary subtitle language.

- Secondary Subtitle

  Set the secondary subtitle language.

PIP Broadcast Viewing

Picture > PIP Try Now

Use the PIP (Picture-In-Picture) function to watch TV in a small window while also watching images from an external source such as a DVD player, a Blu-ray player, or a computer in the background.

Select Picture > PIP to display the PIP settings window. This settings window contains the following options:

- PIP

  Activates/deactivates PIP.

- Aerial

  Select the PIP sub-picture broadcast signal.

- Channel

  Select the PIP sub-picture channel.

- Size

  Select the PIP sub-picture size.

- Position

  Select the PIP sub-picture position.

- Sound Select

  Select the audio source.

PIP restrictions:

- Turning off the TV automatically disables PIP.
- Playing a game or using the karaoke feature on the main screen can result in lower PIP picture quality.
- For PIP to work, the main screen's source must be Component or HDMI. The sub picture supports TV source only.
- The PIP window supports digital channels only.

Scanning for Available Channels

Broadcasting > **Auto Tuning** Try Now

Automatically scans and indexes all channels received through the TV's antenna input connector.

If there are saved channels, this feature deletes the existing list and then saves the newly scanned channels.

If the TV is connected to a cable box, you do not need to do this.

1. Select **Broadcasting** > **Auto Tuning**.
2. Select **Start** when prompted. This initiates the Auto Programme function. The process can take up to 30 minutes to complete.

- **Auto Tuning**

  Scans for channels automatically and stores them in the TV's memory.

- **Cable Search Option** (when the aerial was set to **Cable**)

  Availability depends on the specific model and area.

  Sets additional search options such as the frequency and symbol rate for a cable network search.

  Availability depends on the specific model and area.

Selecting the Broadcast Audio Options

Broadcasting > Audio Options Try Now

- Audio Language

  (Digital channels only)

  Change the default value for audio languages.

  Primary Audio: Set the primary audio language.

  Secondary Audio: Set the secondary audio language.

  The available language may differ depending on the broadcast.

- Audio Format

  (Digital channels only)

  Change a desired audio format. The supported audio format may vary depending on the broadcast programme.

Audio Description

System > Accessibility > Audio Description

(Not available in all locations) (Digital channels only)

This function handles the Audio Stream for the AD (Audio Description) which is sent along with the Main audio from the broadcaster.

Audio Description: Turn the audio description function on or off.

Volume: Adjust the audio description volume.

Using the Channel Settings

Broadcasting > Channel Settings

Manual Tuning

Broadcasting > Channel Settings > Manual Tuning

Scans for a channel manually and stores in the TV.

If a channel is locked using the Channel Lock function, the PIN input window appears.

This function depends on the country and region.

When Aerial Source is set to Terrestrial or Cable

- Digital Channel Tuning

  Scans for a digital channel.

1. Select the New.

   When selecting Aerial → Terrestrial: Channel, Frequency, Bandwidth

   When selecting Aerial → Cable: Frequency, Modulation, Symbol Rate

   - Availability depends on the specific model and area.

2. Select the Search. When scanning has finished, a channel is updated in the channel list.

- Analogue Channel Tuning

  Scans for an analogue channel.

1. Select the New.
2. Set the Programme, Colour System, Sound System, Channel and Search.
3. Select the Store. When scanning has finished, a channel is updated in the channel list.

Channel mode

- P (programme mode)

  When tuning is complete, the broadcasting stations in your area have been assigned to position numbers from P0 to P99. You can select a channel by entering the position number in this mode.

- C (aerial channel mode) / S or Z (cable channel mode)

  These two modes allow you to select a channel by entering the assigned number for each aerial broadcasting station or cable channel.

Fine-Tuning the Screen

Broadcasting > **Channel Settings** > **Fine Tune**

Available for analogue broadcasts only.

Analogue pictures can become shaky and full of noise. If this happens, you can fine-tune the signal and/or reduce noise to clear up the picture.

1. Select **Broadcasting** > **Channel Settings** > **Fine Tune**. An adjustment bar appears on the screen.
2. Make adjustments using the standard remote control until the picture clears up and then select **Save** or **Close**. Select **Reset** to reset the Fine-Tune operation.

Reading digital text

Broadcasting > **Channel Settings** > **Digital Text**

You can use this function when you watch a broadcast that includes both text and multimedia content.

This function is not supported depending on the region or model.

The Digital Text function may not be supported depending on the region.

Multimedia and Hypermedia Information Coding Experts Group (MHEG) is an International standard for data encoding systems used in multimedia and hypermedia. This is at a higher level than the MPEG system which includes data-linking hypermedia such as still images, character service, animation, graphic and video files as well as multimedia data. MHEG is user runtime interaction technology and is being applied to various fields including Video-On-Demand (VOD), Interactive TV (ITV), Electronic Commerce (EC), tele education, teleconferencing, digital libraries and network games.

Changing the Picture Mode and Adjusting the Picture Quality

Choosing the Right Picture Mode for the Viewing Environment

Picture > Picture Mode Try Now

The following picture modes utilize different contrast and brightness settings to provide the best viewing experience for the environment.

When connected to a PC via an HDMI / HDMI-DVI cable, only the Standard and Entertain modes can be chosen.

Picture Mode will be unavailable in Sports Mode.

- Dynamic

  If the ambient lighting is too bright and makes the screen blurry, use this mode to make the picture clearer.

- Standard

  This is the default mode suitable for most environments.

- Natural

  This mode is useful for reducing eye strain.

- Movie

  Appropriate for darkened rooms, for watching movies, and when experiencing eye fatigue. Darkens the screen and reduces glare.

- Entertain

  Sharpens images for a more dynamic viewing experience.

  This mode is only available when connected to a computer via an HDMI / HDMI-DVI cable.

- Stadium

  When you turn Sports Mode (System > Sports Mode) to On, Picture Mode is set to Stadium automatically to configure the picture settings suitable to sports events.

  Standard and Entertain modes are only available when a PC is connected to the TV.

  When a PC is connected to the TV, but the Entertain mode is not available, set Edit Name to DVI PC or PC.

Adjusting the Picture Quality for Each Picture Mode

Picture > **Backlight**, **Contrast**, **Brightness**, **Sharpness**, **Colour** or **Tint (G/R)**

Select one of the settings to display its slide bar. Change the adjustment value using ‹, ›. Change the item using ^, v. Adjusted values are applied to the current source and picture mode.

> The **Colour** and **Tint (G/R)** settings cannot be adjusted when the TV is connected to a computer via an HDMI / HDMI-DVI cable.

Choose a **Picture Mode** and then adjust the settings.

- **Backlight** Try Now

  Adjusts the brightness of individual pixels. Decreasing the brightness reduces power consumption.

- **Contrast** Try Now

  Adjusts the screen contrast.

- **Brightness** Try Now

  Adjusts the overall brightness.

- **Sharpness** Try Now

  Sharpens or dulls the edges of objects.

- **Colour** Try Now

  Adjusts the overall colour saturation.

- **Tint (G/R)** Try Now

  Adjusts the ratio of green to red. Increase the green value to saturate the greens and the red value to saturate the reds.

  > Adjusted values are saved by the TV for the current source and picture mode, and remain in effect each time the source and picture mode are selected. Consequently, the TV can have different picture settings for each external source.

  > The **Colour** and **Tint (G/R)** settings cannot be adjusted when the TV is connected to a computer via an HDMI-to-DVI cable.

Applying the Current Picture Settings to Other Input Sources

Picture > **Apply Picture Mode** Try Now

You can apply the picture quality setting that you configured for the TV to all external devices connected to the TV or to the current source only.

To apply the setting to all external devices connected to the TV, select **All Sources**. To apply the setting to the current input only, select **Current Source**.

Fine-Tuning Each Picture Mode (Advanced Settings)

Picture > **Advanced Settings** Try Now

Select **Picture** > **Advanced Settings** to fine-tune how images are displayed on the TV screen for each **Picture Mode**.

- **Advanced Settings** is only available when the **Picture Mode** is set to **Standard** or **Movie**.
- When the TV is connected to a computer via an HDMI-DVI cable, only **White Balance** and **Gamma** can be adjusted.

Choose a **Picture Mode** and then adjust the settings.

- **Dynamic Contrast** Try Now

  Automatically adjusts the screen contrast. Use this option to achieve the optimal contrast setting.

- **Black Tone** Try Now

  Adjusts the black colour depth.

- **Flesh Tone** Try Now

  Darkens or lightens skin tones.

- **RGB Only Mode** Try Now

  Adjusts the red, green, and blue levels individually.

- **Colour Space** Try Now

  Adjusts the range of colours that can be displayed on screen. **Auto** automatically adjusts the colour space depending on the input signal. **Native** applies a range that is wider than the input signal. **Custom** allows you to adjust the colour space manually.

- **White Balance** Try Now

  Adjust the colour temperature of the picture to make white objects look white, and the overall picture appear natural.

  2 Point: Adjust each of the 3 colour's luminosity with the offset menu and the brightness with the gain menu. To restore the default values, select **Reset**.

  10 Point: Adjust the white balance by adjusting the brightness of each of the 10 sections of red, green, and blue colours of the input signal. To choose a section, select a desired section in **Level** field.

  - You can use the **10 Point** function only when the **Picture Mode** is set to **Movie**. Some external devices may not support this.

- **Gamma** Try Now

  Adjusts the primary colour intensity.

Adjusting the Picture for Easier Viewing (Picture Options)

Picture > Picture Options Try Now

Select **Picture** > **Picture Options** to make additional adjustments for an easier viewing experience.

When the TV is connected to a computer via an HDMI-DVI cable, only **Colour Tone** can be adjusted.

Choose a **Picture Mode** and then adjust the settings.

- **Colour Tone** Try Now

  Adjusts the colour tone. The setting is applied on an individual **Picture Mode** basis. When a **Picture Mode** is changed, the corresponding setting will be applied automatically.

  If the **Picture Mode** is set to **Dynamic**, you will only be able to choose **Cool** or **Standard**.

- **Digital Clean View** Try Now

  Reduces static and ghosting caused by a weak signal. Selecting **Auto Visualisation** displays the signal strength at the bottom the screen. Green indicates the best possible signal.

  Auto Visualisation available for analogue channels only.

- **MPEG Noise Filter** Try Now

  Reduces MPEG noise and improves video quality.

- **HDMI Black Level** Try Now

  Some external devices connected to the TV via an HDMI cable can have issues, such as low black level, low contrast, and dull colours. Use HDMI Black Level to adjust the black level to compensate.

  This is only available when using an external device connected to the TV via an HDMI connector.

  This function is only available when the input signal, connected to the TV via an HDMI connector, is set to RGB444.

- **Film Mode** Try Now

  Optimises the picture quality for movies. Select this mode for watching movies.

  This feature is only available when watching TV or when the input signal is AV, Component (480i, 1080i), or HDMI (1080i).

- **Analogue Clean View**

  Availability depends on the specific model and area.

  Reduce the diagonal noise in the picture, caused by the crosstalk of signals.

- **LED Clear Motion**

  Removes drag from fast scenes with a lot of movement to provide a clear picture.

  When **LED Clear Motion** is **On**, the screen appears darker than when it is **Off**.

  If **LED Clear Motion** is **On** at 60Hz video signal, the screen may flicker.

Picture Support Functions

Changing the Picture Size and Position

Choosing the Right Screen Size

Picture > **Picture Size** > **Picture Size** Try Now

You can change the size of pictures displayed on the TV screen.

Supported screen sizes vary depending on the input signal. Refer to the "Read After Installing the TV" section for more information about supported screen sizes.

- **16:9**

  Set the picture to the 16:9 wide-screen format.

- **Zoom**

  Magnifies the 16:9 wide pictures vertically to fit the screen size. A magnified picture can be moved up and down.

- **Custom**

  Magnifies or shrinks 16:9 pictures vertically and/or horizontally. A magnified or shrunk picture can be moved left, right, up, and down.

- **4:3**

  Sets the picture to basic 4:3 mode.

⚠ **Do not leave the TV in 4:3 mode for an extended period. The dark borders displayed on the left and right / top and bottom of the screen may cause image retention. This phenomenon can appear on LED TV. This is not covered by the warranty.**

Changing the picture size automatically

Picture > Picture Size > Auto Wide

You can make the TV change the picture size automatically in accordance with the input signal.

Availability depends on the specific model and area.

Changing the picture size in 4:3 or Screen Fit mode

Picture > Picture Size > 4:3 Screen Size

You can select a picture size suitable for your geographical area while you are watching TV in the **4:3** or **Fit to screen** mode. The supported screen sizes differ with the country and this function allows you to adjust the picture size in this case.

The **4:3** mode is not available when an external device is connected to the TV via a Component connector or an HDMI connector.

Availability depends on the specific model and area.

Fitting to the picture size

Picture > Picture Size > Fit to screen

You can make the TV fit the full picture without any cutoff to the picture size set by you.

Availability depends on the specific model and area.

Adjusting the Screen Position

Picture > Picture Size > Zoom/Position Try Now

Adjusts the screen position.

This option is only available with **Picture Size** set to **Zoom**, or **Custom**. When the TV is tuned to a digital channel, the screen position cannot be adjusted if the **Picture Size** is set to **Fit to screen**.

1. To adjust the screen's position, select **Picture** > **Picture Size** > **Zoom/Position** or **Position**. A pop-up window appears.
2. Select **Zoom** or **Position** again from the pop-up window.
3. Adjust the screen. Once done, select **Zoom** or **Position** and then **Close**. Select **Reset** to reset the screen position.

Listening to Audio Only with the Screen Turned Off (Picture Off)

Picture > **Picture Off** Try Now

Turns off the screen and plays audio through the speakers only. To turn the screen back on, press any button other than the ⏻ and VOLUME buttons.

Resetting the Picture Mode Settings

Picture > **Reset Picture** Try Now

Use this option to reset the current **Picture Mode** to its factory settings. This does not affect the settings of other Picture Modes.

Changing the Sound Mode and Using Sound Effects

Choosing the Right Sound Mode for the Environment

Sound > Sound Mode Try Now

Sound modes apply preset adjustments to the sound output, optimised for different viewing and listening circumstances.

The sound modes cannot be used when you are listening to audio through external speakers.

- Standard

  This is the normal sound mode.

- Music

  This mode emphasizes normal music instead of voice.

- Movie

  This mode is calibrated to provide the best sound for movies.

- Clear Voice

  This mode emphasizes voice.

- Amplify

  This mode increases the overall intensity of high-frequency sounds for a better listening experience. It is designed for hearing-impaired listeners.

- Stadium

  Setting Sports Mode (System > Sports Mode) to On automatically configures Sound Mode to Stadium for a more realistic viewing experience.

  Stadium cannot be selected by the user.

  This function is not available when you are listening to audio through external speakers.

Using Sound Effects

Sound > Sound Effect Try Now

Use sound effects to alter how the TV projects sound.

Restrictions:

- Sound effects can only be used with the Sound Mode set to Standard.
- Sound effects cannot be used when you are listening to audio through external speakers.

Choose a Sound Effect and then adjust the settings.

- Virtual Surround Try Now

  Produces sound that will make you feel like you are sitting in a movie theatre or concert hall.

- Dialog Clarity Try Now

  Increases voice intensity to make dialog clearer.

- Balance Try Now

  Allows you to adjust the sound settings of the left and right speakers for a better sound balance. To restore the defaults, select Reset.

- Equaliser Try Now

  Lets you adjust the speaker balance and make bandwidth adjustments. Select Reset to reset the settings.

This function is not available when you are listening to audio through external speakers.

This function is only available when Sound Mode is set to Standard.

Sound Support Functions

Selecting Speakers

Sound > Speaker Settings > Speaker Select

This lets you choose which speakers the TV uses for audio output. To listen to the audio through the speakers of a connected receiver or home theatre only, select Receiver or Audio Out. To listen to audio through the TV's speakers and the speakers of a connected AV receiver or home theatre simultaneously, select TV Speaker. If this causes an echo effect, choose any speaker option other than TV Speaker to mute the TV speakers, or turn off the receiver or home theatre.

Using external speakers alone disables the volume button and the mute function. In addition, certain Sound options will also be disabled.

Designating the TV's Installation Type

Sound > Speaker Settings > TV Installation Type

Specify the TV's installation type. Choose between Wall Mount and Stand to optimise the TV's sound automatically.

Listening to TV Sound through Samsung Bluetooth Audio

Availability depends on the specific model and area.

Sound > Speaker Settings > TV SoundConnect

Connect the TV to a Samsung audio device for a richer, clearer sound.

This option is only available for Samsung audio devices that support SoundShare.

Pair the Samsung audio device using the TV's Bluetooth function. Refer to the Samsung audio device's operating manual for more information on pairing.

- Add New Device

  Enables/disables SoundShare. The connection signals from new devices are ignored if Add New Device is set to Off.

  This function is only available for Samsung audio devices that support TV SoundConnect.

  TV SoundConnect, Surround, and Bluetooth Headphones can't be used simultaneously.

  Before using a Bluetooth device, refer to “Read Before Using the Bluetooth Devices."

- Samsung Audio Device List

  Displays a list of paired Samsung audio devices. Select a device to display its menu options. You can activate/deactivate the audio device or remove it from the list.

Listening to the TV through Bluetooth headphones

Sound > Speaker Settings > Bluetooth Headphones

You can connect Bluetooth headphones to the TV. They must be paired using the TV's Bluetooth function. For more information on pairing, refer to the Bluetooth headphone's operating manual.

- **Bluetooth Headphone List**

  Displays a list of Bluetooth headphones that can be paired with the TV. Select a Bluetooth headphone to display its menu options. From this menu, you can activate/deactivate (i.e., pair/unpair) the Bluetooth headphone or remove it from the list.

  - If the TV fails to find a headphone, place the headphone closer to the TV and select **Refresh**.
  - When you turn on a paired Bluetooth headphone, the TV detects it automatically, and then displays a pop-up window. Use this pop-up window to activate/deactivate the Bluetooth headphone easily.

- Before using a Bluetooth device, refer to “Read Before Using the Bluetooth Devices."

- **Multi-output Audio**

  Allows you to listen to audio through the TV's speakers and the connected Bluetooth headphones simultaneously.

Setting up Multiroom Speakers

Sound > Speaker Settings > Multiroom Link Settings

- **Multiroom Link Settings**

  Set up speakers that are connected via your home network.

  The **Multiroom Link** function is not available on all model.

- **Settings**

  Sets the Samsung Multiroom Link compatible speaker(s) to one of the following options.

  – **Surround**

    Select this option when you want to enjoy a surround system using multiple Samsung Multiroom Link compatible speakers in a single space or room.

  – **Multiroom**

    Select this option when you want all your networked Samsung Multiroom Link compatible speakers (speakers that are installed in one or more spaces or rooms and connected by a wireless network) to play the same, combined audio.

  – **SoundBar+Surround**

    Select this option when you want to enjoy a surround sound system by connecting a soundbar and two speakers to the TV in one space or room.

- **Volume Level**

  Adjusts the volume of the speakers selected in the list.

- **Speaker Test**

  Sends a test sound to each speaker to make sure that your Multiroom Link system works properly.

- **Edit Name**

  Allows you to give a name to each speaker.

The **Multiroom Link** function is only available when at least one Samsung Multiroom Link compatible speaker is connected to the TV.

The **Multiroom Link** function is deactivated when you activate **Screen Mirroring**.

The networked speakers may disconnect on their own, depending on your network environment.

The sound quality may be affected by the condition of your wireless network.

Audio and video may become out of sync depending on your TV model.

The audio from the secondary device(s) may lag behind the audio and video of the main device which is playing the source content.

For more information, refer to the Multiroom Link manual on the Samsung web site. (www.samsung.com > SUPPORT > Firmware Manuals & Downloads)

Enabling the Sound (Additional Settings)

Sound > Additional Settings Try Now

Configure additional settings for optimum audio output.

- DTV Audio Level Try Now

  (Digital channels only)

  The TV cannot freely control the volume of the digital audio that it sends to the AV receiver. Use this to set the digital audio volume at a comfortable level.

  - According to the type of broadcast signal, MPEG / HE-AAC can be adjusted between -10dB and 0dB.
  - To increase or decrease the volume, adjust between the range 0 and -10 respectively.

- HDMI Audio Format

  Set the preferred HDMI Audio Input Format.

- Audio Format Try Now

  Selects the Digital Audio output (SPDIF) format. The available Digital Audio output (SPDIF) formats may vary depending on the input source.

- Audio Delay Try Now

  This setting helps correct timing mismatches between the audio and video tracks when you are watching TV and listening to audio through a digital audio device. Enabling the feature displays a slide bar that you can use to adjust the delay by up to 250ms.

- Dolby Digital Comp Try Now

  Some digital TV programmes provide 5.1-channel Dolby audio. This TV converts Dolby audio to stereo audio so that it can play the sound through the TV's speakers. There are two methods to choose from. RF is for better sound at lower volumes, and Line is for higher volumes.

- HD Audio

  Listen to the audio from the TV in HD quality.

  - Standard audio signals are sampled at 48 kHz while HD audio signals are sampled at 96 kHz.
  - Some S/PDIF receivers may not be compatible. For such incompatible receivers, deactivate HD Audio and use normal audio mode instead.
  - The HD audio signals available on the TV are not available on external audio players connected via HDMI, Bluetooth, or Wi-Fi networks.

- Auto Volume Try Now

  When you change channels, video sources, or content, Auto Volume automatically adjusts the TV's volume level so that the volume level remains the same for all sources. For example, if you switch from a streaming video application to a Blu-ray player or a favourite TV channel, Auto Volume can modify the volume up to 12db to equalise the sound.

  The Auto Volume function has two settings: Normal and Night. Normal applies a normal level of volume adjustment. Night applies a slightly lower volume level and is ideal for late-night TV viewing. If you want to use the volume control of a connected source device to control the sound, deactivate the Auto Volume function. When you use the Auto Volume function with a source device, the device's volume control may not function properly.

Setting the Time and Using the Timer

Setting the Current Time

System > Time > Clock Try Now

Set the clock manually or automatically. Once the clock has been set, you can press the INFO button on the standard remote.

The clock must be reset every time the power is disconnected.

Setting the Clock using Digital Broadcast Info

System > Time > Clock > Clock Mode Try Now

Set Clock Mode to Auto. The TV automatically downloads the correct time from a digital channel. To enable this option, the TV's Antenna jack must be connected to either an antenna or a cable output and must be receiving digital broadcasts. The accuracy of the time information received may vary depending on the channel and signal. If your TV is connected to a set-top-box using HDMI or Component connections, you must set the time manually.

If the Clock is Wrong in Auto Mode

System > Time > Clock > Time Offset Try Now

If the time set automatically is incorrect, you can offset the clock in 1-hour increments by as much as -/+ 12 hours. Select System > Time > Clock > Time Offset and offset the clock to the correct time.

Time Offset adjusts the time through network connections and is only available if the Clock is set to Auto and the TV is connected to the Internet though a local area network.

Time Offset will adjust the time if the TV fails to receive time information through normal digital broadcast signals.

Setting the Clock Manually

System > Time > Clock > Clock Set Try Now

Manually enter the time. Set Clock Mode to Manual and then select Clock Set to enter the current time and date.

Clock Set: Set the current Date and Time.

Using the Timers

Using the Sleep Timer

System > Time > Sleep Timer Try Now

This automatically shuts off the TV after a preconfigured period of time. Select **System > Time > Sleep Timer**. You can set the timer up to 180 minutes in 30-minute increments.

Turning On the TV using On Timer

System > Time > On Timer Try Now

Set the **On Timer** so that the TV turns on automatically at a chosen time. Select **System > Time > On Timer**. The timer configuration window appears. Configure the following settings:

The **On Timer** is only available if the **Clock** has been set.

- **Setup**

  Specify the dates and the duration. Use **Manual** to specify the days of the week.

- **Time**

  Set the time that the TV turns on automatically.

- **Volume**

  Specify the volume when the TV turns on.

- **Source**

  Select the signal source from the list. Specify the channel or source to be displayed when the TV turns on. To specify a USB device, a USB device must first be connected to the TV. To play media from an HDMI or Component source such as a DVD player or Blu-ray player, the device must already be turned on, and playing the media when the TV is turned on.

- **Aerial**

  Set the **Source** to **TV** to select a broadcast signal.

- **Channel**

  Set the **Source** to **TV** to select a channel.

- **Music** / **Photo**

  Set the **Source** to **USB** to choose a USB folder that contains music or photo files. Selecting both music and image files plays the music files and displays the images at the same time.

Restrictions:

- This feature will not function properly if the selected USB device does not contain media files or a folder has not been specified.
- The slideshow will not start if there is only one image file on the USB device.
- Folders with long names cannot be selected.
- Always use different folder names for multiple USB devices.
- Use a USB memory stick or multi-card reader. The **On Timer** may not work with certain battery-powered USB devices, MP3 players, or PMPs because the TV may take too long to recognise the device.

Turning Off the TV Using Off Timer

System > **Time** > **Off Timer** Try Now

Set the **Off Timer** to turn the TV off automatically at a specific time. Select **System** > **Time** > **Off Timer**. The timer configuration window appears. Configure the following settings:

The **Off Timer** is only available if the **Clock** has been set.

- **Setup**

  Specify the dates and the duration. Use **Manual** to specify the days of the week.

- **Time**

  Set the time that the TV turns off automatically.

Using the Screen Burn Protection and Energy Saving Features

Preventing Screen Burn

System > Auto Protection Time Try Now

Still images can leave burned-in after-images on the screen if left for a long time. Use Screen Burn Protection to protect the screen. Select **System** > **Auto Protection Time** and then choose a time setting from the list. If a still image is shown on the screen for longer than the time you selected, the TV will automatically activate Screen Burn Protection to prevent burned-in after- images that may damage the screen.

Using Energy Saving Features

Availability depends on the specific model and area.

System > Eco Solution Try Now

Eco Solution adjusts the TV's brightness level and prevents overheating to reduce overall power consumption.

- **Energy Saving** Try Now

  Select a brightness setting from the list to reduce the TV's power consumption.

- **Eco Sensor** Try Now

  Availability depends on the specific model and area.

  Automatically adjusts the TV's brightness level based on the ambient light level to reduce the TV's power consumption. If the **Eco Sensor** has adjusted the screen's brightness level, you can manually adjust the screen's minimum brightness level by adjusting the **Min. Backlight**. Changing the **Picture** menu's **Backlight** setting while **Eco Sensor** is running automatically disables **Eco Sensor**.

- **No Signal Power Off** Try Now

  Select a time from the list. If no signal is received for the specified duration, the TV automatically cuts off the power to reduce power consumption.

- **Auto Power Off** Try Now

  If the TV remains turned on for four hours without any user input, the TV will automatically turn off to prevent overheating.

- **Motion Lighting** Try Now

  Adjusts the brightness in response to on-screen movements to reduce power consumption.

  This function is only available when **Picture Mode** is set to **Standard**.

  This function is deactivated when you adjust a picture quality setting, such as **Contrast** and **Brightness**.

Using Anynet+ (HDMI-CEC)

Use Anynet+ (HDMI-CEC) to control all external devices that support HDMI-CEC using just the TV's remote control. Note that Anynet+ (HDMI-CEC) only works with the TV's remote control and not with the panel keys.

Anynet+ Requirements:

- Anynet+ cannot be used to control external devices that do not support HDMI-CEC.
- Anynet+ devices must be connected to the TV using an HDMI cable. Some HDMI cables may not support Anynet+ (HDMI-CEC). In this case, you will need to replace the HDMI cable.
- The TV remote control may not function under certain circumstances. If this occurs select the Anynet+ device again.
- Anynet+ (HDMI-CEC) only works with external devices that support HDMI-CEC and only when those devices are either in standby mode or turned on.
- Anynet+ (HDMI-CEC) can control up to 12 compatible external devices (up to 3 of the same type). With home theatre systems, however, the number of systems that can be controlled is limited to one.
- To listen to 5.1-channel audio from an external device, connect the device to the TV via an HDMI cable and the device's digital audio output connector directly to the home theatre system.
- A home theatre system that has been connected to the TV using an HDMI cable and an optical cable supports 2-channel audio only. 5.1-channel audio is, however, available for digital broadcasts with 5.1-channel audio.

Setting Up Anynet+ (HDMI-CEC)

System > Anynet+ (HDMI-CEC) Try Now

- Anynet+ (HDMI-CEC) Try Now

  Enables/disables Anynet+ (HDMI-CEC). Set to Off to disable all Anynet+ related features. Set to On to enable all Anynet+ (HDMI-CEC) related features.

- Auto Turn Off Try Now

  When set to Yes, turns off Anynet+ (HDMI-CEC) compatible external devices when the TV is turned off.

  Some Anynet+ (HDMI-CEC) compatible devices do not support this feature.

- Search for Devices Try Now

  Search for Anynet+ (HDMI-CEC) compatible devices.

Using Anynet+ (HDMI-CEC)

Selecting an external device

After connecting external devices to the TV, select **MENU** > **System** > **Anynet+ (HDMI-CEC)** > **Search for Devices**. The TV displays a list of Anynet+ (HDMI-CEC)-compliant devices that you can set up as Anynet+ (HDMI-CEC)-enabled devices (i.e., devices that can be controlled with the TV's remote control). To set up an Anynet+ (HDMI-CEC)-compliant device as an Anynet+ (HDMI-CEC)-enabled device, you must select it on the Source screen. Follow the instructions in the next section.

Setting up as an Anynet+ (HDMI-CEC)-enabled device

1. Press the **SOURCE** button on the remote control. On the **Source** screen, select the device and then press the ⌄ button.
2. Select **Anynet+ (HDMI-CEC)** from the **Tools** list. The selected device is set up as an Anynet+ (HDMI-CEC)-enabled device. The following menu options are available.

   The menu options available in the pop-up menu may differ with the external device.

- **Anynet+ (HDMI-CEC)**

  Sets up the selected device as an Anynet+ (HDMI-CEC)-enabled device and then displays a list of Anynet+ (HDMI-CEC)-compliant devices connected to the TV. Select **View TV** to exit Anynet+ (HDMI-CEC), and start watching TV.

Using the e-Manual

Launching the e-Manual

Support > **e-Manual**

The embedded e-manual contains information.

You can also download a copy of the e-manual from Samsung's website, and read it on your computer or print it out.

Yellow words indicate a menu item; white bold words indicate remote control buttons. Arrows are used to indicate the menu path. (Example: **Picture** > **Picture Mode**)

1. Select **e-Manual**. The e-Manual loads.
2. Select a category from the side of the screen. Once a selection has been made, the contents of the selected category appear.
3. Select an item from the list. This opens the e-manual on the corresponding page.

If a description doesn't fit on a single screen

You can scroll pages in one of the following ways.

- Position the focus on the page to display / on the screen.
- Press the ∧, ∨ buttons on Samsung remote Control to use the scrolling function.

Additional e-Manual Features

Loading Pages using Keywords

Select **Search** from the side of the screen to bring up the search screen. Enter a search term and then select **Done**. Select an item from the search results to load the corresponding page.

Loading Pages from the Index Page

Select **Index** from the side of the screen to bring up the index screen. Select a keyword from the list to navigate to the relevant page.

Using History to Load Previously Read Pages

Select **Recent pages** from the side of the screen. A list of previously read pages is shown. Select a page. The e-Manual jumps to the selected page.

Accessing the Menu from the e-Manual (Try Now)

Select (**Try Now**) on a feature-description to directly move to the corresponding menu and try out the feature.

If you want to read an **e-Manual** entry on a specific screen menu feature, press **E-MANUAL** button on the remote control directly.

Certain menu options cannot be used.

Loading Reference Pages

Select (**Link**) from the side of a feature-description page to access the corresponding reference page.

Updating the e-Manual to the Latest Version

You can update the e-Manual in the same way as updating apps.

1. Press , then tap on the Enter button, to load the **SAMSUNG APPS** screen.
2. Press and hold the Enter button. The Options menu appears.
3. From the Options menu on the screen, select **Update Apps**. A pop-up window appears. You can update the e-Manual to the latest version.

   Update Apps is shown on the screen only when an update is required.
4. Select **e-Manual** in the pop-up window and then select **Update**. You can update the e-Manual to the latest version.

Updating the Software

Support > Software Update Try Now

Check your TV's software version and upgrade it if necessary.

If the TV is connected to the Internet, TV is set to update software automatically. If you don't want to update it automatically, set Auto update (Software Update > Auto update) to Off.

Updating Software over the Internet

Support > Software Update > Update now Try Now

Select Support > Software Update > Update now. An online upgrade downloads and installs the upgrade software directly from the Internet.

This option requires an Internet connection.

⚠ DO NOT turn off the TV's power until the upgrade is complete. The TV will turn off and on automatically after completing the software upgrade. All video and audio settings return to the default settings after a software upgrade.

Updating Software using a USB connection

Support > Software Update > Update now

1. Visit Samsung's website on a computer and download the update package to a USB device.

   Save the update package in the USB device's top-level folder. Otherwise, the TV will not be able to locate the update package.

2. Connect the USB device with the update package to the TV.
3. Select Support > Software Update > Update now. The software is updated using the update package on the USB device.

⚠ DO NOT turn off the TV's power until the upgrade is complete. The TV will turn off and on automatically after completing the software upgrade. All video and audio settings return to the default settings after a software upgrade.

Enabling Automatic Software Updates

Support > Software Update > Auto Update

If the TV is connected to the Internet, the Auto Update option upgrades the TV's software while it is in Standby Mode. In Standby Mode, the TV appears to be turned off, but still has access to the Internet. This allows the TV to upgrade itself automatically while it is not in use.

- This option requires an Internet connection.
- This function may take a longer time if a different networking function is running concurrently.

Because the TV's internal processes are operating, the screen may emit a faint glow, and this may continue for more than 1 hour until the software download is complete.

If you agree to the Smart Hub terms and conditions, Auto Update will be set to On, If you don't want the TV's software updated automatically, set Auto Update (Support > Software Update > Auto Update) to Off.

1. Select Support > Software Update > Auto Update.
2. Specify when you want the upgrade to take place. The TV will connect to the server at the specified time, download the update package, and upgrade its own software.

Protecting the TV from Hacking and malicious code

System > Smart Security Try Now

When the TV is connected to the Internet, it is vulnerable to hacks and malicious code. Smart Security protects the TV and storage media connected to the TV from such threats.

Checking the TV and Connected Storage Media

System > Smart Security > Scan Try Now

Navigate to System > Smart Security and select Scan. This scans the TV and connected media for the presence of malicious code. If no malicious code is detected, a notification window appears on the screen.

If malicious code is detected

If malicious code was found, the results of the scan will appear on the screen. This result window displays all malicious code found, and provides options to either quarantine the code or allow them to continue.

1. Select all malicious code to quarantine or allow.
2. Select **Isolate** or **Block**. This moves the selected malicious code to the **Isolated List** or **Blocked List**.

   The **Isolated List** displays all quarantined malicious codes. You can try to cure the codes.

   The **Blocked List** displays all blocked malicious code. You can also quarantine or allow codes from this list.

Configuring additional functions in Smart Security Settings

System > **Smart Security** > **Settings** Try Now

- **Antivirus**

  Monitors the TV in real-time to prevent virus from infecting the TV.

- **Network Security**

  Protects the TV from hacking to minimize a leak of private information.

- **Camera**

  Turn the TV camera on or off.

- **Microphone**

  Turn the TV microphone on or off.

- **Auto Scan**

  Makes the TV automatically scan itself and connected storage media when it is turned on.

- **Auto Isolate**

  Adds malicious codes found during the scanning process to the Isolated List automatically.

Using Other Functions

Enabling the High Contrast

System > Accessibility > High Contrast Try Now

Navigate to System > Accessibility and set the High Contrast option to On. This option changes major service screens to white text on black background or change the transparent TV menus to opaque so that text can be more easily read.

Adjusting the Menu Transparency

System > Accessibility > Menu Transparency Try Now

Navigate to System > Accessibility and adjust the opacity level. Adjust the menu's transparency.

When the High Contrast (System > Accessibility > High Contrast) setting is set to On, menu display is automatically set to opaque and you cannot change the Menu Transparency settings.

Expanding the Smart Hub's Focus Area

System > Accessibility > Enlarge Try Now

Navigate to System > Accessibility and set Enlarge to On. This zooms in the focused item when you use Smart Hub.

Using Multi-output Audio

System > Accessibility > Multi-output Audio Try Now

TV sound will be played simultaneously through the TV's internal speakers and connected Bluetooth headphones.

Listening to the TV through Bluetooth headphones (for the audibly impaired)

Sound > Speaker Settings > Bluetooth Headphones

You can turn on both of the TV speaker and Bluetooth headphones at the same time. The audibly impaired can adjust the TV volume to control audio from the Bluetooth headphones.

Changing the Menu Language

System > Menu Language Try Now

Select **System > Menu Language** and then choose a language from the list. Use this option to change the menu language.

Checking Notifications

System > Notifications Try Now

You can view the list of event messages generated by the TV. **Notifications** appear on the screen when events such as an update release for an app or Samsung Account login/logout occurs.

- To delete all notifications, select **Delete All**.
- To check the SMART TV's service notifications in a web browser, select **Service Notice**.

Setting Up a Password

System > Change PIN Try Now

Set a PIN (Personal Identification Number) to lock channels, reset the TV, and change the TV settings.

1. Select **System > Change PIN**. The PIN input window appears.
2. Enter a PIN. The default PIN is 0000.
3. Enter a new PIN and then enter it again to confirm it. The PIN change is complete.

- If you forget your PIN, you can reset it with your remote control. With the TV turned on, press the following buttons on the remote to reset the PIN to 0000: In Standby mode: **MUTE** → **8** → **2** → **4** → ⏻ (ON)

Enabling Game Mode

System > General > Game Mode Try Now

Game Mode optimises the TV's settings for playing video games on a gaming console such as PlayStation™ or Xbox™.

Requirements:

- Game Mode cannot be used for normal TV viewing.
- Connect the gaming console before enabling Game Mode. Otherwise, the picture quality may suffer.
- The screen may shake a little.
- Enabling Game Mode automatically sets the Picture Mode to Game and the Sound Mode to Game.
- To use a different external device, first disconnect the game console and disable Game Mode.

Enjoying Rich Colours and Superior Picture Quality (BD Wise)

System > General > BD Wise Try Now

Connecting a Samsung DVD player, Blu-ray player, or home theatre system that supports BD Wise enables the richest colours and best possible picture quality. Enabling BD Wise automatically optimises the TV's resolution.

This feature is only available when the external device is connected via an HDMI cable.

Enabling/Disabling Sound Feedback

System > General > Sound Feedback Try Now

Sound Feedback provides audio cues as you navigate through menus and select menu options.

Locking/Unlocking the Panel Keys

System > General > Panel Lock Try Now

Use to lock and unlock the TV's front panel buttons.

Showing/Hiding the Samsung Logo while Booting

System > General > Boot Logo Try Now

Use to enable or disable the Samsung logo display that appears when the TV starts up.

Enabling the TV to Boot Faster

System > General > Samsung Instant On Try Now

Enable or disable the functionality that enables your TV to turn on quickly.

Depending on the model.

Registering the TV as a DivX-Certified Device (Watching Paid DivX Movies)

System > DivX® Video On Demand

Viewing DivX® DRM-protected DivX movies on the TV first requires registration of the TV as a DivX-certified device.

- DRM ("Digital rights management") Digital Rights Management is a digital security measure designed to protect copyright.
- You can watch personally-created and free DivX content without registering the TV.
- Visit the DivX website (http://www.divx.com) and log into your user account before registering the TV as a DivX-certified device. If you do not have an account, please create one.

1. Select **System > DivX® Video On Demand**. A window with a registration code appears on the screen.
2. Visit the DivX website on a computer and click [Register Your Device] under [Support] from the top menu.
3. Enter the registration code shown on the TV's screen in the [Enter your registration code] field.
4. Enter the TV's name in the [Name your device] field and then select [NEXT].
5. Click [DOWNLOAD] and save the [device_name.divx] file.
6. Transfer the [device_name.divx] file from the computer onto a USB device and then plug the USB device into the TV.
7. Play the [device_name.divx] file on the TV to register the TV as a DivX-certified device.

Restoring the TV to the Factory Settings

Support > Self Diagnosis > Reset Try Now

This option restores all TV settings (excluding the Internet) to the factory defaults.

1. Select **Support > Self Diagnosis > Reset**. The Security PIN entry window appears on the screen.
2. Enter the Security PIN and then select **Yes**. All settings are then reset. The TV turns off and on again automatically, and then displays the **Setup** screen.

   - For more information on Setup, refer to the user manual that came with the TV.

Turning the TV into a Display Model (for retail stores)

Support > Use Mode Try Now

Select **Support > Use Mode > Store Demo**. This turns the TV into a display model for use in a retail environment.

- For all other uses, select **Home Use**.
- **Store Demo** should be used in retail environments only. With **Store Demo**, certain functions are disabled and the TV automatically resets itself after a certain amount of time.

Getting Support

Support through Remote Management

Support > Remote Management Try Now

If you need assistance with your TV, you can use this feature to let Samsung Electronics diagnose your TV remotely. You will need to read and agree to the service agreement before using this feature. A Samsung Electronics technician will then diagnose, repair, and update your TV remotely.

This option requires an Internet connection.

What Does Remote Service Do?

Samsung Remote Support service offers you one-on-one support with a Samsung Technician who can remotely.

- **Diagnose** your TV
- **Adjust the TV settings** for you
- **Perform a factory reset** your TV
- Install recommended **firmware updates**

How Does it Work?

Having a Samsung Tech remotely service your TV is easy.

Call the Samsung Contact Centre and ask for remote support.

Open the menu on your TV and go to the Support section.

Select Remote Management, and then read and agree to the service agreements. When the PIN screen appears, provide the PIN number to the agent.

The agent accesses your TV.

Finding the Information You Need for Service

Support > Contact Samsung

Use this option to find the support service website's address and contact number, your TV's model number, your TV's software version, the Smart Hub info, and other information you need to receive the service support.

Press A to view the open source licence.

There is a problem with the screen

Testing the Picture

Support > Self Diagnosis > Picture Test Try Now

Before you review the list of problems and solutions below, run the Picture Test to determine if the problem is caused by the TV. The Picture Test displays a high definition picture you can examine for flaws or faults. If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Centre for assistance. If the test picture is displayed properly, there may be a problem with an external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

If the test picture does not appear or there is noise or distortion, the TV may have a problem. Contact Samsung's Call Centre for assistance.

If the test picture is displayed properly, there may be a problem with the external device. Please check the connections. If the problem persists, check the signal strength or refer to the external device's user manual.

The Problem	Try this!
Flickering and Dimming	If your Samsung Television is flickering or dimming sporadically, you may need to disable some of the energy efficiency features. Disable Energy Saving (System > Eco Solution > Energy Saving) or Eco Sensor (System > Eco Solution > Eco Sensor). Availability depends on the specific model and area.
Component Connections/Screen Colour	If the colour on your Samsung television screen is not correct or the black and white colours are off, run Picture Test (Support > Self Diagnosis > Picture Test). If the test results indicate that the problem is not caused by the TV, do the following: • Confirm that the TV's video input connectors are connected to the correct external device video output connectors. • Check the other connections as well. If the TV is connected to an external device via a component cable, confirm that the Pb, Pr, and Y jacks are plugged into their proper connectors.
Screen Brightness	If the colours on your Samsung TV are correct but just a little too dark or bright, try adjusting the following settings first. • Go to the Picture menu and adjust the Contrast, Brightness, Sharpness, Colour, and Tint (G/R) settings.
Unwanted Powering Off	If your Samsung TV appears to turn off by itself, try disabling some of the TV's energy efficiency features. See if Sleep Timer (System > Time > Sleep Timer) has been enabled. The Sleep Timer automatically turns the TV off after a specified period of time. If the Sleep Timer has not been enabled, see if No Signal Power Off (System > Eco Solution > No Signal Power Off) or Auto Power Off (System > Eco Solution > Auto Power Off) has been enabled and disable them.
Problems Powering On	When the TV is turned on, the remote control receiver flashes 5 times before the screen turns on. If you are having problems powering on your Samsung television, there are a number of things to check before calling the service department. Confirm that the TV's power cord is connected correctly at both ends and that the remote control is operating normally. Make sure that the antenna cable or cable TV cable is firmly connected. If you have a cable box confirm that it is plugged in and turned on.
Unable to find a Channel	Launch Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning). If your TV is not connected to a cable box, run Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning).
The TV image does not look as good as it did in the store.	Store displays are all tuned to digital, HD (high definition) channels. If you have an analogue cable/set top box, upgrade to a digital set top box. Use HDMI or Component cables to deliver HD (high definition) picture quality. Many HD channels are upscaled from SD (Standard Definition) content. Look for a channel that is broadcasting true HD content. • Cable Subscribers: Try HD channels from the channel lineup. • Terrestrial/Cable Aerial Connection: Try HD channels after running the Auto Tuning function. Adjust the cable box's video output resolution to 1080i or 720p.

The Problem	Try this!
The picture is distorted.	The compression of video content may cause picture distortions, especially in fast moving pictures from sports programmes and action movies. A weak or bad quality signal can cause picture distortions. This is not an issue with the TV. Mobile phones used close to the TV (within 1 m) may cause noise in analogue and digital channels.
The colour is wrong or missing.	If you're using a Component connection, make sure that the Component cables are connected to the correct jacks. Incorrect or loose connections may cause colour problems or a blank screen.
The colour is poor or the picture is not bright enough.	Go to the Picture menu and then adjust the Picture Mode, Brightness, Sharpness, and Colour settings. See if Energy Saving (System > Eco Sensor > Energy Saving) has been enabled. Try resetting the picture. (Picture > Reset Picture)
There is a dotted line on the edge of the screen.	If the Picture Size has been set to Fit to screen, change the setting to 16:9. Change the cable box resolution.
The picture is black and white.	If you are using AV composite input, connect the video cable (yellow) to the TV's green component jack.
When changing channels, the picture freezes or is distorted or delayed.	If the TV is connected to a cable box, try to reset the box. (Disconnect and then reconnect the AC cord and wait until the cable box reboots. It may take up to 20 minutes.) Set the output resolution of the cable box to 1080i or 720p.

I can't hear the sound clearly

Testing the Sound

Support > Self Diagnosis > Sound Test Try Now

Before you review the list of problems and solutions below, make sure that the Speaker Select menu item is set to TV Speaker, and then listen to the speakers again. If the TV still does not play audio, run the Sound Test. The Sound Test uses a built-in melody to check for sound problems. If the TV does not play sound during the Sound Test, or the sound is distorted, there may be a problem with the TV. Contact Samsung's Call Centre for assistance. If the TV plays the Sound Test melody without distortion, there may be a problem with an external device. Please check the connections. If the problem persists, refer to the external device's user manual.

If you can't hear the melody or there is a problem, make sure Sound > Speaker Settings > Speaker Select is set to TV Speaker and then try again. If the problem persists, there may be a problem with the TV. Contact Samsung's Call Centre for assistance.

If the melody is played, there may be a problem with the external device. Please check the connections. If the problem persists, refer to the external device's user manual.

The Problem	Try this!
There is no sound or the sound is too low at maximum volume.	Check the volume control of the device (cable box, DVD, Blu-ray, etc.) connected to your TV.
The picture is good but there is no sound.	Set Sound > Speaker Settings > Speaker Select to TV Speaker. If you are using an external device, check the device's audio output option. (For example, you may need to change your cable box's audio option to HDMI if the box connected to your TV is using an HDMI cable.) To listen to the computer sound, connect the external speaker to the computer's audio output connector. If your TV has a headphone jack, make sure there is nothing plugged into it. Reboot the connected device by disconnecting and then reconnecting the device's power cable.
The speakers are making an odd sound.	Make sure that the audio cable is connected to the correct audio output connector on the external device. For antenna or cable connections, check the signal information. A low signal level may cause sound distortions. Run Sound Test (Support > Self Diagnosis > Sound Test).

There is a problem with the broadcast

The Problem	Try this!
The TV is not receiving all channels.	If your TV is not connected to a cable box: • Confirm that the coaxial cable is securely connected to the TV. • If you are using an antenna, verify it is positioned correctly and the all the connections are secure. • Run Setup (System > Setup) or Auto Tuning (Broadcasting > Auto Tuning).
There are no captions with digital channels.	Go to Subtitle (System > Accessibility > Subtitle) and change the Subtitle Mode. Some channels may not have caption data.
The picture is distorted.	The compression of the video content may cause picture distortions. This is especially true with fast moving pictures from sports programmes and action movies. A weak signal can cause picture distortions. This is not a problem with the TV.

The computer won't connect

The Problem	Try this!
The "Mode Not Supported" message appears.	Set your PC's output resolution so it matches a resolution supported by the TV.
The video is OK but there is no audio.	If you are using an HDMI connection, check the audio output setting on your PC. If you are using a DVI to HDMI cable, a separate audio cable is required.

I can't connect to the Internet

The Problem	Try this!
The wireless network connection failed.	Make sure the TV is connected to a wireless IP router.
The software update over the Internet has failed.	Check the network connection status. If the TV is not connected to a network, connect to a network. The upgrade stops if you already have the latest software version.

The Schedule Recording/Timeshift function isn't working

The Problem	Try this!
The TV cannot recognise the USB device or the Format Device, Check Device and Device Performance Test functions fail.	Refer to the USB device's manual and see if data can be stored on it. Check if the USB device is in a locked state. Check if the USB device was formatted when it was connected to a computer. Formatting a USB device after connecting it to the TV may result in a formatting failure. If Device Performance Test or Format Device has failed, there may be a problem with the USB device or its specifications. Try using a different USB device.
There is a message saying I need to format the USB Drive.	Check if the USB device is in a locked state. Use the USB recovery function to recover the USB device.
Schedule Recording cannot be used.	Check if there is a USB device connected to the TV. Check if the channel is a channel that can be recorded. Recording will automatically stop if the signal becomes too weak. The Timeshift function will not work if there isn't enough storage space on the USB device.
I get a performance test failure message and then Schedule Recording and the Timeshift operation stops working.	This problem can occur when using a low-performance USB Drive that does not support recording. A USB hard drive with a speed of 5,400rpm or above is recommended. A USB memory stick is not supported.

Anynet+ (HDMI-CEC) isn't working

The Problem	Try this!
Anynet+ does not work.	Confirm that the device is an Anynet+ device. The Anynet+ system supports Anynet+ devices only. Check if the power cord of the Anynet+ device is properly connected. Check the cable connections of the Anynet+ device. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Check whether the TV remote control is in TV mode. Check whether the remote control is Anynet+ compatible. Anynet+ may not function when certain functions are operational. (Channel Search, Smart Hub, set up, etc.) If you have disconnected and then reconnected the HDMI cable, scan for devices again or turn your TV off and on.
I want to start Anynet+.	Check if the Anynet+ device is properly connected to the TV, and then select the Anynet+ (HDMI-CEC) (System > Anynet+ (HDMI-CEC)) menu to see if Anynet+ (HDMI-CEC) is set to On.
I want to exit Anynet+.	Select View TV from the Anynet+ menu. Select a non-Anynet+ device from the Source list.
The message "Connecting to Anynet+ device..." or "Disconnecting from Anynet+ device" appears on the screen.	You cannot use the remote control when you are configuring Anynet+ or switching to a viewing mode. Use the remote control after the TV has completed the Anynet+ configuration or has switched to a viewing mode.
The Anynet+ device won't play.	You cannot use the play function when Setup is in progress.
The connected device is not displayed.	Check whether the device supports Anynet+. Check whether the HDMI cable is properly connected. Go to System and see if Anynet+ (HDMI-CEC) has been set to On. Scan for Anynet+ devices again. Anynet+ devices must be connected to the TV using an HDMI cable. Make sure the device is connected to your TV with an HDMI cable. Some HDMI cables may not support Anynet+. If the connection is terminated because there has been a power failure or the HDMI cable has been disconnected, please scan for the device again.
The TV audio is not being played through the receiver.	Connect an optical cable to the TV and the receiver. ARC enables digital sound to be outputted via the HDMI (ARC) port. However, ARC is only available when the TV is connected to an audio receiver that supports ARC.

I am having trouble launching/using apps

The Problem	Try this!
I launched an app, but it's in English. How can I change the language?	Languages supported by the app may be different from the user interface language. The ability to change the language depends on the service provider.
My application is not working.	Check with the service provider. Refer to the help section on the application service provider's website.

My file won't play

The Problem	Try this!
Some files can't be played.	This problem may occur with high-bitrate files. Most files can be played back, but you might experience problems with high-bitrate files.

I want to reset the TV

Reset	Path	Description
Reset Settings	Support > Self Diagnosis > Reset	Reset Picture, Sound, Channel, Smart Hub, and all other settings except for the network settings to their factory default settings.
Resetting Smart Hub	Smart Hub > Reset Smart Hub	Reset all saved information relating to Samsung accounts and linked service accounts, as well as Smart Hub service agreements and applications.

Other Issues

The Problem	Try this!
The TV is hot.	Watching TV for an extended period of time causes the panel to generate heat. The heat from the panel is dissipated through internal vents running along the top of the TV. The bottom, however, may feel hot to the touch after extended use. Children watching TV need constant adult supervision to prevent them from touching the TV. This heat, however, is not a defect and does not affect the TV's functionality.
The picture won't display in full screen.	HD channels will have black bars on either side of the screen when displaying upscaled SD (4:3) content. Black bars will appear at the top and bottom of the screen when you watch movies that have aspect ratios different from your TV. Adjust the picture size options on your external device or set the TV to full screen.
The "Mode Not Supported" message appears.	The output resolution of the attached device is not supported by the TV. Check the supported resolutions of the TV and adjust the external device's output resolution accordingly.
The Subtitle item in the TV menu is grayed out.	You cannot select the Subtitle menu if you have selected a source connected to the TV via HDMI or Component connections. To view subtitle, turn on the external device's subtitle function.
The TV smells of plastic.	This smell is normal and will dissipate over time.
The Signal Information option under Self Diagnosis isn't activated.	Verify that the current channel is a digital channel. The Signal Information is only available for digital channels.
The TV is tilted to the side.	Remove the base stand from the TV and reassemble it.
The Broadcasting option has been deactivated.	Broadcasting is only available when the Source is set to TV. The Broadcasting menu cannot be accessed while watching TV using a cable box. Certain Broadcasting menus cannot be accessed while recording or while the TimeShift operation is in progress.
The settings are lost after 5 minutes or every time the TV is turned off.	If the Use Mode is set to Store Demo, the TV's audio and video settings are automatically reset every 5 minutes. Change the Use Mode (Support > Use Mode) to Home Use.
There is an intermittent loss of audio or video.	Check the cable connections and reconnect them. Loss of audio or video can be caused by using overly rigid or thick cables. Make sure the cables are flexible enough for long term use. If you are mounting the TV to a wall, we recommend using cables with 90-degree connectors.
There are small particles on the TV's bezel.	This is part of the product's design and is not a defect.

The Problem	Try this!
The PIP menu is not available.	PIP functionality is only available when you are using an HDMI or Component source.
A POP (TV's internal banner ad) appears on the screen.	Change the Use Mode (Support > Use Mode) to Home Use.
The TV is making a popping noise.	The expansion and contraction of the TV's outer casing may cause a popping noise. This does not indicate a product malfunction. The TV is safe to use.
The TV is making a humming noise.	Your TV utilizes high-speed switching circuits and high levels of electrical current. Depending on the TV's brightness level, the TV may seem slightly noisier than a conventional TV. Your TV has undergone strict quality control procedures that meet our demanding performance and reliability requirements. Some noise coming from the TV is considered normal and is not an acceptable cause for an exchange or refund.

Before Using the Recording and Timeshift Functions

Availability depends on the specific model and area.

Before Using the Recording and Schedule Recording Functions

- To set up a Schedule Recording, you must first set the TV's clock. Set the **Clock** (**System** > **Time** > **Clock**).
- You can set up a maximum total of 30 **Schedule Viewing** and **Schedule Recording** entries.
- Recordings are DRM-protected and therefore cannot be played back on a computer or on a different TV. In addition, these files cannot be played back on your TV if its video circuit has been replaced.
- A USB hard drive with a speed of 5,400rpm or above is recommended. However, RAID-type USB hard drives are not supported.
- USB memory sticks are not supported.
- The total recording capacity may vary depending on the amount of available hard drive space and the recording quality level.
- **Schedule Recording** requires at least 100MB of free space on the USB storage device. Recording will stop if the available storage space falls below 50MB while recording is in progress.
- If the available storage space falls below 500MB while both the Schedule Recording and Timeshift functions are in progress, only the recording will stop.
- The maximum recording time is 720 minutes.
- A video is played according to the TV settings.
- If the input signal is changed while recording is in progress, the screen will go blank until the change is made. In this case, recording will resume, but ● will not be available.
- **Device Performance Test** must be performed on the USB storage device connected to the TV before a recording can be made. To perform the **Device Performance Test**, select USB Drive in the **MY CONTENT** panel and then select the recording device. When you make a recording on the **Guide** or Programme Info screen, if the USB storage device has failed in the **Device Performance Test**, the **Format Device** and **Device Performance Test** are performed again.
- When using the Record or Schedule Recording function, the actual recording may start a second or two later than the specified time.
- If the Schedule Recording function is operating while a recording is being made on an HDMI-CEC external device, the priority is given to the Schedule Recording.
- Connecting a recording device to the TV automatically deletes abnormally saved recording files.
- If the **Off Timer** or **Auto Power Off** has been set, the TV will overide these settings, continue to record, and turn off after the recording has ended.

Before the Using Timeshift Function

- A USB hard drive with a speed of 5,400rpm or above is recommended. However, RAID-type USB hard drives are not supported.
- USB memory sticks or flash drives are not supported.
- The total recording capacity may vary depending on the amount of available hard drive space and the recording quality level.
- If the available storage space falls below 500MB while both the Schedule Recording and Timeshift functions are in progress, only the recording will stop.
- The maximum amount of time available for the Timeshift function is 90 minutes.
- The Timeshift function is not available for locked channels.
- A time-shifted video is played according to the TV settings.
- Before the Timeshift function can be used, the **Device Performance Test** must be performed on the USB storage device connected to the TV. To perform the **Device Performance Test**, select **USB Drive** in the **MY CONTENT** panel and then select the recording device.
- The Timeshift function may be terminated automatically once it reaches its maximum capacity.
- The Timeshift function requires at least 1.5GB of free space available on the USB storage device.
- Launching an app, switching to an analogue channel, or changing the TV to a mode that does not support the Timeshift function automatically terminates the Timeshift function. The Timeshift operation will resume if the TV is changed back to a digital channel again.

Read Before Using APPS

- Due to the product characteristics featured on the Samsung Smart Hub, as well as limitations in available content, certain features, applications, and services may not be available on all devices or in all territories. Some Smart Hub features may also require additional peripheral devices or membership fees. Visit http://www.samsung.com for more information on specific device information and content availability. Services and content availability are subject to change without prior notice.
- Samsung Electronics takes no legal responsibility whatsoever for any interruption of app services caused by the service provider for any reason.
- Application services may be provided in English only and available content may differ with the area.
- For more information about applications, visit the applicable service provider's website.
- An unstable Internet connection may cause delays or interruptions. In addition, applications may terminate automatically depending on the network environment. If this occurs, check your Internet connection and try again.
- Application services and updates may become unavailable.
- Application content is subject to change by the service provider without prior notice.
- Specific services may differ with the version of the application installed on the TV.
- An application's functionality may change in future versions of the application. If this occurs, run the application's tutorial or visit the service provider's website.
- Depending on the service provider's policies, certain applications may not support multitasking.

Web Browser Restrictions (Some countries/areas don't support Web Browser)

1. The browsing screen may differ from the one on your computer.
2. The web browser is not compatible with Java applications.
3. You cannot download files. If you attempt to download a file, you will receive an error message instead.
4. The web browser may not be able to access certain websites.
5. Playing Flash videos may be restricted.
6. E-commerce for online purchases is not supported.
7. With websites that have scrollable windows, scrolling a window can result in corrupted characters.
8. ActiveX is not supported.
9. Certain options are not accessible in Link Browsing mode. (Switch to Pointer Browsing to activate those options.)
10. Only a limited number of fonts are supported. Certain symbols and characters may not be displayed properly.
11. The response to remote commands and the resulting on-screen display may be delayed while a webpage is loading.
12. Loading a webpage may be delayed or suspended completely with certain operating systems.
13. The copy and paste operations are not supported.
14. When composing an email or a simple message, certain functions such as the font size and colour selection may not be available.
15. There is a limit to the number of bookmarks and the size of the log file that can be saved.
16. The number of windows that can be opened concurrently varies depending on the search conditions and the TV model.

17. The web browsing speed will vary depending on the network environment.
18. Playing embedded video automatically disables PIP. Video playback may not commence after PIP is disabled. In this case, you will have to reload the page.
19. The web browser supports .mp3 audio files only.
20. If the **Clock** (**System** > **Time** > **Clock**) has not been set, the browsing history will not be saved.
21. The browsing history is saved from latest to oldest, with the oldest entries being overwritten first.
22. Depending on the types of video/audio codecs supported, it might not be possible to play certain video and audio files while playing Flash content.
23. Video sources from PC-optimised streaming service providers may not play properly on our proprietary web browser.
24. Using the on-screen QWERTY keyboard automatically disables PIP. (Except when entering a URL.)

Read Before Playing Photo, Video, or Music Files

Availability depends on the specific model and area.

Limitations on use of photo, video, and music files

- The TV supports MSC (Mass Storage Class) USB devices only. MSC is a class designation for mass storage devices. Types of MSC devices include external hard drives, flash card readers, and digital cameras. (USB hubs are not supported.) These kinds of devices must be connected directly to the TV's USB port. The TV may not be able to recognise the USB device or read the files on the device if it is connected to the TV via a USB extension cable. Do not disconnect the USB device while transferring files.
- When connecting an external hard drive, use the USB (HDD) port. We recommend that you use an external hard drive with its own power adapter.
- Certain digital cameras and audio devices may not be compatible with the TV.
- If there are multiple USB devices connected to the TV, the TV might not be able to recognise some or all the devices. USB devices that use high-power input should be connect the USB [5V, 1A] port.
- The TV supports the FAT, exFAT, and NTFS file systems.
- After sorting files in the Folder view mode, the TV can display up to 1000 files per folder. If the USB device contains more than 8,000 files and folders, however, some files and folders might not be accessible.
- The PTP (pier to pier) connection mode is available only for digital cameras. If you connect a smartphone or tablet to the TV using PTP mode, the TV will not recognise it.

  Be sure to connect a USB or external Hard Drive, supporting USB 2.0, to the USB 2.0 port.

  Certain files, depending on how they were encoded, may not play on the TV.

  Certain files are not available depending on the model.

Supported external subtitles

Certain files, depending on how they were encoded, may not play on the TV.

Name	Format
MPEG-4 Timed text	.ttxt
SAMI	.smi
SubRip	.srt
SubViewer	.sub
Micro DVD	.sub or .txt
SubStation Alpha	.ssa
Advanced SubStation Alpha	.ass
Powerdivx	.psb
SMPTE-TT Text	.xml

Supported internal subtitles

Certain files, depending on how they were encoded, may not play on the TV.

Name	Container
Xsub	AVI
SubStation Alpha	MKV
Advanced SubStation Alpha	MKV
SubRip	MKV
VobSub	MKV
MPEG-4 Timed text	MP4
TTML in smooth streaming	MP4
SMPTE-TT Text	MP4
SMPTE-TT PNG	MP4

Supported image formats and resolutions

Certain files, depending on how they were encoded, may not play on the TV.

File extension	Format	Resolution
*.jpg *.jpeg	JPEG	15360x8640
*.png	PNG	4096x4096
*.bmp	BMP	4096x4096
*.mpo	MPO	15360x8640

Supported music formats and codecs

Certain files, depending on how they were encoded, may not play on the TV.

File extension	Format	Codec	Note
*.mp3	MPEG	MPEG1 Audio Layer 3	
*.m4a *.mpa *.aac	MPEG4	AAC	
*.flac	FLAC	FLAC	Supports up to 2 channels
*.ogg	OGG	Vorbis	Supports up to 2 channels
*.wma	WMA	WMA	Supports up to 10 Pro 5.1 channels. WMA lossless audio is not supported. Supports up to the M2 profile.
*.wav	wav	wav	
*.mid *.midi	midi	midi	Supports type 0 and type 1. Seek is not supported. Supports USB device only.
*.ape	ape	ape	
*.aif *.aiff	AIFF	AIFF	
*.m4a	ALAC	ALAC	

Supported video codecs

Certain files, depending on how they were encoded, may not play on the TV.

<table>
<tr><th>File format</th><th>Container</th><th>Video codecs</th><th>Resolution</th><th>Frame rate (fps)</th><th>Bitrate (Mbps)</th><th>Audio codecs</th></tr>
<tr><td rowspan="14">*.avi
*.mkv
*.asf
*.wmv
*.mp4
*.mov
*.3gp
*.vro
*.mpg
*.mpeg
*.ts
*.tp
*.trp
*.mov
*.flv
*.vob
*.svi
*.m2ts
*.mts
*.divx</td><td rowspan="14">AVI
MKV
ASF
MP4
3GP
MOV
FLV
VRO
VOB
PS
TS
SVAF</td><td>H.264 BP/MP/HP</td><td rowspan="15">1920x1080</td><td>60</td><td>40</td><td rowspan="15">Dolby Digital
LPCM
ADPCM(IMA, MS)
AAC
HE-AAC
WMA
Dolby Digital Plus
MPEG(MP3)
DTS(Core, LBR)
G.711(A-Law, µ-Law)</td></tr>
<tr><td>HEVC(H.265 - Main Profile only)</td></tr>
<tr><td>Motion JPEG</td><td>30</td><td rowspan="14">20</td></tr>
<tr><td>MVC</td><td rowspan="6">60</td></tr>
<tr><td>DivX 3.11 / 4 / 5 / 6</td></tr>
<tr><td>MPEG4 SP/ASP</td></tr>
<tr><td>Window Media Video v9(VC1)</td></tr>
<tr><td>MPEG2</td></tr>
<tr><td>MPEG1</td></tr>
<tr><td>Microsoft MPEG-4 v1, v2, v3</td><td rowspan="4">30</td></tr>
<tr><td>Window Media Video v7(WMV1) ,v8(WMV2)</td></tr>
<tr><td>H.263 Sorrenson</td></tr>
<tr><td>VP6</td></tr>
<tr><td>*.webm</td><td>WebM</td><td>VP8</td><td>90</td><td>Vorbis</td></tr>
<tr><td>*.rmvb</td><td>RMVB</td><td>RV8/9/10 (RV30/40)</td><td>1920x1080</td><td>60</td><td>20</td><td>RealAudio 6</td></tr>
</table>

Other restrictions

- Codecs may not function properly if there is a problem with the content.
- Video content does not play or does not play correctly if there is an error in the content or container.
- Sound or video may not work if they have standard bit rates/frame rates above the TV's compatibility ratings.
- If the Index Table is has an error, the Seek (Jump) function will not work.
- When playing video over a network connection, the video may not play smoothly because of data transmission speeds.
- Some USB/digital camera devices may not be compatible with the TV.
- HEVC codec is only available in MKV /MP4 / TS containers.

Video decoders

- H.264 FHD is supported up to Level 4.1. (does not support FMO/ASO/RS)
- VC1 AP L4 is not supported.
- All video codecs excluding WMV v7, v8, MSMPEG4 v3, MVC, and VP6:

  Below 1280x720: 60 frame max

  Above 1280x720: 30 frame max
- GMC 2 or above is not supported.
- Supports SVAF Top/Bottom, Side by Side, and Left/Right view sequence type (2ES) only.
- Supports BD MVC specs only.

Audio decoders

- WMA 10 Pro supports up to 5.1 channels. Supports up to the M2 profile. WMA lossless audio is not supported.
- QCELP and AMR NB/WB are not supported.
- Vorbis is supported for up to 5.1 channels.
- Dolby Digital Plus is supported for up to 5.1 channels.
- The DTS LBR codec is only available for MKV / MP4 /TS containers.
- The supported sample rates are 8, 11.025, 12, 16, 22.05, 24, 32, 44.1, and 48 KHz, and differ by the codec.

Restrictions

Restrictions to PIP (Picture-in-Picture)

- Turning off the TV automatically disables PIP.
- Playing a game or using the karaoke feature on the main screen can result in lower PIP picture quality.

1 Tuner model	MAIN TV				
PIP	DTV	ATV	HDMI	AV	Component
DTV	X	X	○	X	○
ATV	X	X	○	X	○

This function is dependent on the specific model and area.

2 Tuner model	MAIN TV				
PIP	DTV	ATV	HDMI	AV	Component
DTV	○	○	○	○	○
ATV	X	X	○	X	○

This function is dependent on the specific model and area.

Read After Installing the TV

Picture sizes and input signals

The **Picture Size** setting is applied to the current source. The applied **Picture Size** will remain in effect whenever you select that source unless you change it.

Actual Picture sizes and input signals may differ depending on the TV model.

Input signal	Picture size
Analogue channel / Composite	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**
Component (480i, 480p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**
Component (720p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**
Component (1080i, 1080p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**, **Fit to screen**
Digital channel (720p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**
Digital channel (1080i, 1080p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**, **Fit to screen**
HDMI (720p, 1080i, 1080p)	**16:9**, **Wide Fit**, **Personal Setting**, **4:3**, **Fit to screen**

Installing an Anti-Theft Kensington Lock

A Kensington Lock is a physical device that can be used to protect the TV against theft. Look for the Kensington slot on the back of the TV. The slot has a icon next to it. To use the lock, wrap the lock cable around an object that is too heavy to carry and then thread it through the TV's Kensington slot. The lock is sold separately.

The method of using a Kensington Lock may differ for each TV model. Refer to the Kensington Lock manual for more information.

Read before setting up a wireless Internet connection

Precautions for wireless Internet

- This TV supports the IEEE 802.11a/b/g/n communication protocols. Samsung recommends using IEEE 802.11n. Video files stored on a device connected to the TV via Home Network may not play back smoothly.
- To use wireless Internet, the TV must be connected to a wireless router or modem. If the wireless router supports DHCP, the TV can use a DHCP or static IP address to connect to the wireless network.
- Select a channel that is not currently in use for the wireless router. If the channel set for the wireless router is currently being used by another device, the result is usually interference and/or a communications failure.
- Most wireless networks have an optional security system. To enable a wireless network's security system, you need to create a password using characters and numbers. This password is then needed to connect to a security-enabled AP.

Wireless security protocols

- The TV only supports the following wireless network security protocols.
  - Authentication Modes: WEP, WPAPSK, WPA2PSK
  - Encryption Types: WEP, TKIP, AES
- In compliance with the newest Wi-Fi certification specifications, Samsung TVs do not support WEP or TKIP security encryption in networks running in the 802.11n mode.
- If the wireless router supports WPS (Wi-Fi Protected Setup), you can connect the TV to your network using PBC (Push Button Configuration) or a PIN (Personal Identification Number). WPS automatically configures the SSID and WPA key settings.
- The TV cannot connect to non-certified wireless routers.

Read Before Connecting a Computer (Supported Resolutions)

- When you connect your TV to a computer, set the computer's video card to one of the standard resolutions listed in the tables below or on the next page. The TV will automatically adjust to the resolution you choose. Note that the optimal and recommended resolution is 1920 X 1080 at 60 Hz.
- Choosing a resolution not included in the tables can result in a blank screen or just the power indicator turning on.
- Refer to the user manual of your graphics card for compatible resolutions.

IBM

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720 x 400	70 Hz	31.469	70.087	28.322	- / +

MAC

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
640 x 480	67 Hz	35.000	66.667	30.240	- / -
832 x 624	75 Hz	49.726	74.551	57.284	- / -
1152 x 870	75 Hz	68.681	75.062	100.000	- / -

VESA DMT

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
640 x 480	60 Hz	31.469	59.940	25.175	- / -
640 x 480	72 Hz	37.861	72.809	31.500	- / -
640 x 480	75 Hz	37.500	75.000	31.500	- / -
800 x 600	60 Hz	37.879	60.317	40.000	+ / +
800 x 600	72 Hz	48.077	72.188	50.000	+ / +
800 x 600	75 Hz	46.875	75.000	49.500	+ / +
1024 x 768	60 Hz	48.363	60.004	65.000	- / -
1024 x 768	70 Hz	56.476	70.069	75.000	- / -
1024 x 768	75 Hz	60.023	75.029	78.750	+ / +
1152 x 864	75 Hz	67.500	75.000	108.000	+ / +
1280 x 720	60 Hz	45.000	60.000	74.250	+ / +
1280 x 800	60 Hz	49.702	59.810	83.500	- / +
1280 x 1024	60 Hz	63.981	60.020	108.000	+ / +
1280 x 1024	75 Hz	79.976	75.025	135.000	+ / +
1366 x 768	60 Hz	47.712	59.790	85.500	+ / +
1440 x 900	60 Hz	55.935	59.887	106.500	- / +
1600 x 900RB	60 Hz	60.000	60.000	108.000	+ / +
1680 x 1050	60 Hz	65.290	59.954	146.250	- / +
1920 x 1080	60 Hz	67.500	60.000	148.500	+ / +

Supported Resolutions for Video Signals

CEA-861 (HDMI)

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720(1440) x 480i	60 Hz	15.734	59.940	27.000	- / -
720(1440) x 576i	50 Hz	15.625	50.000	27.000	- / -
720 x 480	60 Hz	31.469	59.940	27.000	- / -
720 x 576	50 Hz	31.250	50.000	27.000	- / -
1280 x 720	60 Hz	45.000	60.000	74.250	+ / +
1280 x 720	50 Hz	37.500	50.000	74.250	+ / +
1920 x 1080i	60 Hz	33.750	60.000	74.250	+ / +
1920 x 1080i	50 Hz	28.125	50.000	74.250	+ / +
1920 x 1080	60 Hz	67.500	60.000	148.500	+ / +
1920 x 1080	50 Hz	56.250	50.000	148.500	+ / +
1920 x 1080	30 Hz	33.750	30.000	74.250	+ / +
1920 x 1080	25 Hz	28.125	25.000	74.250	+ / +
1920 x 1080	24 Hz	27.000	24.000	74.250	+ / +

CEA-861 (DVI)

Resolution (Dots x lines)	Display format	Horizontal frequency (KHz)	Vertical frequency (Hz)	Clock frequency (MHz)	Polarity (horizontal / vertical)
720 x 480	60 Hz	31.469	59.940	27.000	- / -
720 x 576	50 Hz	31.250	50.000	27.000	- / -
1280 x 720	60 Hz	45.000	60.000	74.250	+ / +
1280 x 720	50 Hz	37.500	50.000	74.250	+ / +
1920 x 1080	60 Hz	67.500	60.000	148.500	+ / +
1920 x 1080	50 Hz	56.250	50.000	148.500	+ / +

Read Before Using Bluetooth Devices

Restrictions on using Bluetooth

- The Samsung Bluetooth Speaker is only available when a device is supporting **TV SoundConnect**.
- You can't use Bluetooth Devices, **Speaker Select** (**Sound** > **Speaker Settings** > **Speaker Select**) and Surround features simultaneously.
- Compatibility issues may occur, depending on the Bluetooth Devices. (A Mobile exclusive headphone may not be available, depending on the environment.)
- Sync issues may occur, depending on the Bluetooth Devices.
- The TV and Bluetooth Devices may disconnect, depending on the distance between them.
- A Bluetooth device may hum or malfunction
  - When a part of your body is in contact with the receiving/transmitting system of the Bluetooth device or the TV.
  - When the device is subject to electrical variation from obstructions caused by a wall, corner, or office partitioning.
  - When the device is exposed to electrical interference from same frequency-band devices including medical equipment, microwave ovens, and wireless LANs.
- If the problem persists, be sure to use a Digital Sound Output (Optical) port or HDMI (ARC) port.

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Glossary

- **480i / 480p / 720p / 1080i / 1080p**

  Generally refers to the number of effective scanning lines that determines the screen's resolution. There are two scanning methods: interlaced and progressive.

  - Scanning

    Sequential projection of pixels to form images. The higher the number of pixels, the clearer and more vivid the images.
  - Progressive

    A sequential scanning method that scans every line, one after another.
  - Interlaced

    A staggered scanning method that scans every other line until the end of the screen and then fills in the remaining lines.

  Example) If the number of horizontal scan lines is 480i

  Scans 240 lines from start to finish and then scans the remaining 240 lines for a total of 480 lines.

  * General differences between 480i and 480p are as follows:

	480i	480p
Horizontal Frequency	15.75Khz	31.5Khz
FPS	30	60
Lines on Screen	480	480

- **ARC (Audio Return Channel)**

  ARC lets the TV output digital sound to an audio device and input digital sound from the same audio device through one HDMI cable. However, ARC is only available through the HDMI (ARC) port and only when the TV is connected to an ARC-enabled AV receiver.

- **DVI (Digital Visual Interface)**

  Connecting the TV's DVI connector to a computer's DVI connector via an HDMI-to-DVI cable lets you use the TV as a computer monitor. However, HDMI-to-DVI cables deliver video signals only. You must connect a set of speakers to the computer using a separate cable to hear the computer's audio.

- **HDMI (High Definition Multimedia Interface)**

  HDMI is a method of transmitting both video and audio signals via a single cable.

- **Dynamic versus Static IP Addresses**

  If the network requires a dynamic IP address, use an ADSL modem or router that supports the Dynamic Host Configuration Protocol (DHCP). Modems and routers that support DHCP automatically provide the IP address, subnet mask, gateway and DNS values the TV needs to access the Internet, so they do not have to be entered manually. Most home networks use a dynamic IP address.

  If the network requires a static IP address, enter the IP address, subnet mask, gateway, and DNS values manually when setting up the network connection. To get the IP address, subnet mask, gateway and DNS values, contact your Internet Service Provider (ISP).

  If the network requires a static IP address, use an ADSL modem that supports DHCP. ADSL modems that support DHCP also allow static IP addresses.

- **Bluetooth**

  Bluetooth is a short-distance wireless communication protocol allowing information exchange between connected mobile phones, laptops, earphones and headphones with Bluetooth-compatible devices. It is mostly used for low-power consuming wireless connections within a very short-distance of 10m.

- **Ethernet**

  Ethernet is a LAN (Local Area Network) that uses coaxial cables standardised by the IEEE.

- **Component Connection**

  Component connections are mostly used for game consoles and transmit the video signal by splitting it into a luminance signal (Y) and two colour signals (Pb and Pr). The connector is marked as [Component IN]_(Pr, Pb, Y) on the back of the TV. On some devices, it is sometimes marked as Cr, Cb, Y. Cb and Cr are the digital conversions of the Pb and Pr signals.

  The connectors are normally colour-coded red (R), blue (B), and green (G) and offer the best picture quality possible for an analogue connection.